FOOD SECURITY AND SELF-SUFFICIENCY: VOICING THE REALITIES OF HAWAIʻI'S SMALL FARMERS WHO PRODUCE FOOD FOR LOCAL CONSUMPTION

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For my brother who kept me safe on our journey against all odds.

For the Swedes who loved me as their own child.

For the teachers who inspired me to polish the heart.

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Abstract

Over the last twenty years, planners have reclaimed interest and involvement in food and agriculture planning with the goal of enhancing community food security through strengthening the local food economy and addressing people's access to affordable good food. However, solutions for growing small-scale farmers and the local food supply has been lacking. Planners have addressed food insecurity in urban areas but not food supply with rural farmers. This is partly because planners have not felt "at home" in farming and rural communities. Hawaii grows less than ten percent of all the food its residents and visitors consume. Since the decline of plantation era agriculture in Hawaii, public policy objectives have transitioned from promoting diversified agriculture i.e. "*any other industry than sugar and pineapple*" to promoting "*local food grown for local consumption*" i.e. agricultural self-sufficiency. The State of Hawaii has created policy goals and objectives to double local food production by 2020 but implementation has been slow.

This dissertation research provides a range of new insights to community food security through the value driven activities of alternative farmers in Hawaii who produce food for local consumption. The study proposes that it is important for planners to work directly with farmers to improve community food security and identifies several policy initiatives for planners to support farmers to scale-up local food production. The project was conducted using an ethnographic approach with the author immersed with Hawaii's alternative farmers. Research design and results bottom-up, participatory, action based, and validated by farmers. The findings suggests three priority areas where planners can support the implementation of State goals and objectives by working closer with farmers on the ground level and develop targets that support increased local food production. In particular, the conclusion offers pathways for planners to increase production through policy priorities for workforce development, food hubs, local markets, and agricultural tourism.

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Chapter 1:

Invisible Communities Growing Local Food

I begin with the proposition that eating is an agricultural act.

Wendel Berry, 1989

The Problem with 21st Century Food Security

According to the Food and Agriculture Organization of the United Nations (UN FAO), "*food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs for an active and healthy life*" (UN FAO, 2008). The four dimensions of food security are 1) physical availability or supply of food, 2) economic and physical access to food, 3) food utilization and sufficient energy and nutrient intake by individuals, and 4) stability of the other three dimensions over time (UN FAO, 2008). All four dimensions must be fulfilled simultaneously for food security objectives to be realized (UN FAO, 2008).

Planners have reclaimed interest and involvement in local food systems planning over the last twenty years (Pothuckuchi and Kaufmann, 1999). While planners used to work on the fringe of farming communities with conservation programs to preserve land resources for agricultural use, they have not been involved with community food systems planning for over a half a century in the U.S. (Vitiello and Brinkley, 2014). Vitiello and Brinkley (2014, p15) suggest that "*Food system planning is among the most dynamic 'new' directions in planning, though it has yet to tackle some of its oldest problems. Urban agriculture and food projects offer community economic development institutions opportunities to build food and land sovereignty, even as the place of agriculture in cities and suburbs remains ambiguous and debated in many places.*"

The current agenda for food planning has been based on a narrow conceptualization on food security to address the justice issues associated with access to healthy, affordable, and culturally appropriate foods predominantly in urban areas. Planners have collaborated to ensure access to healthy and affordable food particularly for low-income urban residents along the food supply chains by improving the built food environment (Pothukuchi, 2005; Minaker et al., 2016); however, producers and production have been disconnected from the discourse and the planner's agenda.

Two decades ago, Pothuckuchi and Kaufmann (1999, 2000) argued that planners have not had the experience and skillset to work with agricultural producers and in rural areas. There has been a gap in food planning literature and practice from the onset to address the need for locally produced food and small-scale farm viability despite the focus on strengthening local food systems. Increased local food production has not been highlighted as a solution to strengthen community food security yet ironically, lacking of access to locally grown foods has been defined as the central problem. Producers are crucial element of food security but will often require planners to be more familiar with rural development. As a result, there is a lack of planning practitioners who get involved at the production level of community food security efforts yet they are urgently needed. Planners attention to alternative farmers in community food systems is urgent because, at worst, if planners do not advocate for them then no one else will. That could, in turn, affect planners' goal of improving access for people who suffer from food insecurity.

Efforts to scale-up local food production has been heavily criticized in food systems literature. Guthman et al (2006) suggests there is a tension between food security and farm security and that food localization tends to favor farmers than the poor who suffer from food insecurity. The problem in part with Guthman's statement is that it does not recognize that farmers, their families, and rural communities are disproportionally poorer and hungrier compared to other residents. The local food movement, has benefitted some farmers by increased spending on local food by customers, which, in turn, allows farmers an increased income and a chance to continue to farm. It would be, however, incorrect to suggest that because of policy intervention or government programs, farmers are more privileged than the poor. Government programs and planning efforts have almost entirely been focused on the people who need good food to eat rather than people who grow good food. Guthman and others have focused the debate on access to food as an avenue of social justice (e.g. Allen, 2010; Alkon and Noorgard, 2009).

Scholars suggest that increased food production does not address structural injustices in the local food system, injustices that cannot be addressed by capitalist or market logic, but are caused by them (Guthamn, 2004, 2008; Allen, 2010; Alkon and Norgaard, 2009; Winter, 2003; DuPuis and Goodman, 2005; Born and Purcell, 2006). This dissertation argues against the idea that access and affordability of good food should dominate the food security debate because the view fails to address food supply. Instead, it offers an alternative view of strengthening community food systems by empowering alternative farmers. This research suggests that planners must develop advocacy for

alternative farmers and not only other stakeholder groups when planning for community food systems. Planners have been at the forefront of addressing food security by linking federal nutritional programs such as SNAP to local produce markets; however, addressing farmers as a means of increasing local food supply has generally been lacking. The title of this chapter is "*invisible communities growing local food*" because alternative farmers and their communities have been practically invisible to planners and in community food security planning efforts. It is urgent to understand the role of local food production and alternative farmers. Their role is overlooked in the debates on food justice, the built food environment, and strategies for building healthy communities. The next chapter includes a longer discussion of food planning and policy efforts to improve food security in several counties and municipalities in the U.S.

Dissertation Aim. The overarching aim of this dissertation is to create conceptual and pragmatic linkages among planners and farmers in Hawaii to improve community food security. In simple words, this would be to make planners more familiar with farmers' perspectives of common challenges in scaling –up production and how to resolve them.

Dissertation Objectives. To achieve the overarching aim of this dissertation of linking planners and farmers, the following objectives will be pursued:

1. Synthesize relevant empirical, theoretical, and seminal research
    a) Synthesize the debate on food security, food insecurity, the local food movement, agricultural self-sufficiency and food planning;
    b) Synthesize relevant data from the U.S. agricultural census in regards the U.S. mainland and Hawaii trends in local food systems;
2. Identify pathways for planners to increase local food production through relevant grassroots farm policy in Hawaii;
    a) To create rich, descriptive, participatory narratives and real stories of people who produce food for local consumption in Hawaii;
    b) Document potential multiplier effects of the economic well-being of farmers that extend to the surrounding residents and community;
    c) Identify policy areas of crucial importance (priorities) that can make or break local farm operations including a thorough understanding of strategies for revenue creation and cost-saving;

d) Document the author's approach to community engaged scholarship including efforts of to collaborate and build relationships in farming communities to support bottom-up and participatory policy, programs and action items to improve farmers' economic wellbeing;

3. Recommend policy solutions for planners on federal, state, and local levels corresponding to the lived realities of small-scale farmers and discuss if and how policy needs are different in Hawaii compared to the U.S. mainland.

The research goal is to contribute to improved food security and self-sufficiency in Hawaii by increasing planners' understanding of sustainable agriculture operations. By identifying characteristics of successful and unsuccessful existing farm operations, planners should be able to fill the implementation void in Hawaii between policy formulations and program implementation. Financially successful farmers, in turn, can maintain existing operations and attract more farmers to the agricultural industry.

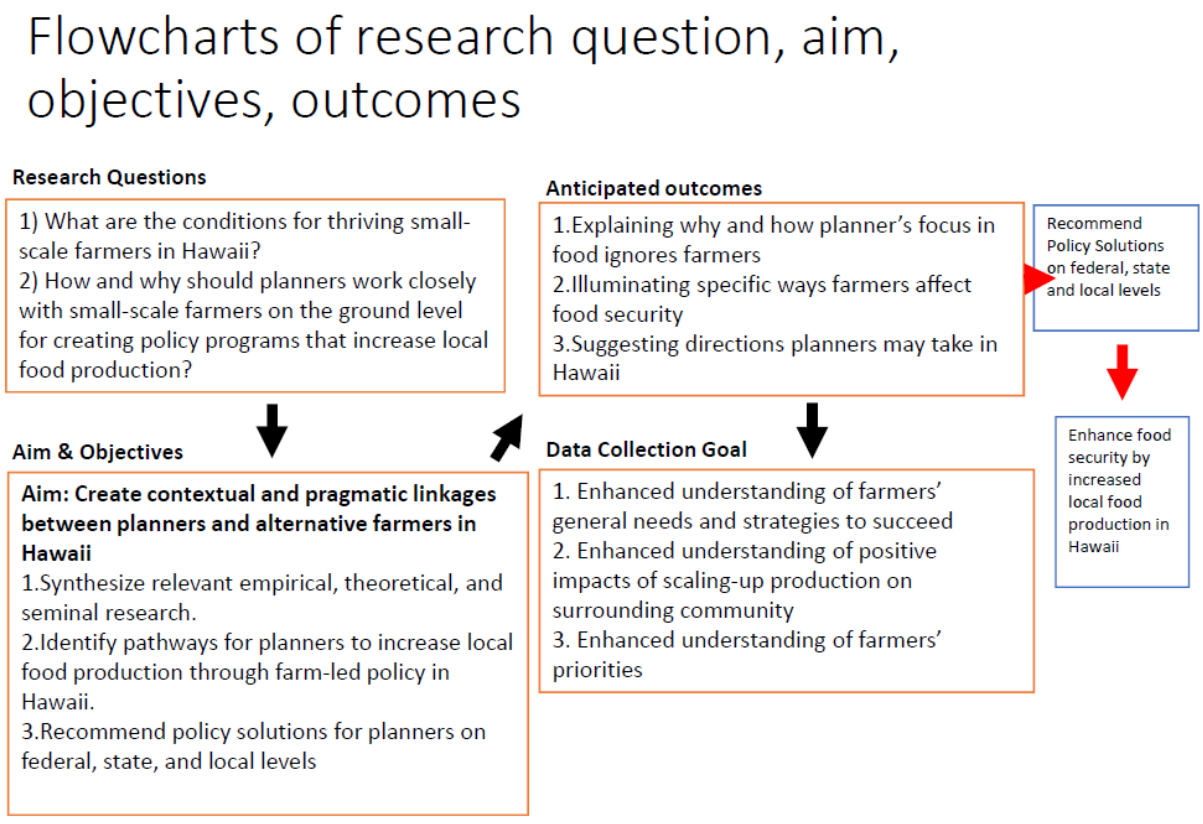

Figure 1.1 Flowchart of research questions, aim, objectives, and outcomes

Key Operational Terms

This section provides definitions for some of the commonly used terms and central concepts in this dissertation.

Action Research- According to Sankaran (2001), action research is a cyclical iterative process of action and reflection on and in action. Through reflection the researcher can conceptualize and generalize what happened (action) and assess how it may differ given alternative situations (Sankaran, 2001).

Agricultural Labor- According to NAL dictionary (2019), agricultural labor is defined as people gainfully employed by a farm operator to assist with the farm work, including regular, seasonal, local, migratory, full-time or part-time employment. The term is also used for agricultural workers, farm workers, and farmworkers. In this dissertation, the term worker or labor also includes non-paid agricultural workers such as volunteers but also people in training such as interns and apprentices.

Agricultural Self-sufficiency- The concept of food self-sufficiency is generally taken to mean the extent to which a country can satisfy its food needs from its own domestic production. It is sometimes thought that the best way to increase a country's food security level is to increase its level of self-sufficiency, and this idea has a certain intuitive appeal (UN FAO, 1998). It may seem that a country has more control over its food supply if it not dependent on international markets, where food imports may come from countries which could be politically hostile (UN FAO, 1998). In this dissertation, self-sufficiency is discussed for the purpose of the Hawaiian Islands consistent with the use of the term with policy planning efforts in Hawaii.

Alternative Farming- According to the National Agricultural Library dictionary (NAL, 2019) alternative farming is production methods other than energy- and chemical intensive one-crop (monoculture) farming. Alternatives include using animal and green manure rather than chemical fertilizers, integrated pest management instead of chemical pesticides, reduced tillage, crop rotation (especially with legumes to add nitrogen), alternative crops, or diversification of the farm enterprise. Alternative farming is used as an overarching term for many other more specific concepts that are defined below. These include community food systems, community food security, small-scale farms, beginner farmer, new farmer, and community supported agriculture.

Beginning Farmer- The term "beginning farmer" is defined by USDA as those who have been operating a farm or ranch for less than 10 years—includes people who are merely considering farming as a career, those in the early years of farming, and growers who are fine-tuning a well-established farm business (ATTRA, 2019). In this dissertation, small and small-scale are used interchangeably.

Built Environment- In social science, the term built environment, or built world, refers to the human-made surroundings that provide the setting for human activity, ranging in scale from buildings to parks. Roof and Oleru (2008, p25) suggests the built environment is "*the human-made space in which people live, work, and recreate on a day-to-day basis.*"

Community Food Security- Community food security (CFS) is defined as a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice. (Hamm and Bellows 2003).

Community Food Systems/ Regional food systems/ Local Food Systems- According to NAL dictionary (2019), local food systems are collaborative efforts that integrate food production, processing, marketing/distribution and consumption within a given geographical area, place or community. Local food systems may also be characterized by certain market and non-market distribution channels: farm direct marketing channels including farmer's markets, community supported agriculture (CSA), farm-to-institution programs; community and home gardening; and gleaning programs. According to NAL dictionary (2019) the terms local food systems, food localization, and regional food systems are also used for community food systems.

Community Supported Agriculture- According to NAL dictionary (2019) community supported agriculture consists of a community of individuals who pledge support to a farm operation with the growers and consumers providing mutual support and sharing the risks and benefits of food production. Members pledge in advance to cover the anticipated costs of the farm operation and farmer's salary. In return, they receive shares in the farm's bounty throughout the growing season.

Direct-to-Consumer (DTC) Marketing: According to Low et al., (2015) direct-to-consumer sales is a local food marketing arrangement in which producers sell agricultural products directly to the final consumers, such as sales to consumers through farmers' markets, CSAs or farm stands. DTC producers often operate related income activities such as farm to table restaurants or events, agricultural tours, bed and breakfast operations, and training for future farmers (Lass et al., 2003). In this dissertation, the terms local sales, direct sales, and farm-to-table operations are also used for DTC operations. In addition, the term alternative farmer or just farmer is at times used to describe a farmers who relies on DTC sales as their primary farm income.

Family Farms- According to NAL dictionary (2019) family farms are agricultural businesses which (1) produces agricultural commodities for sale in such quantities so as to be recognized as a farm rather than a rural residence; (2) produces enough income (including off farm employment) to pay family

and farm operating expenses, to pay debts, and to maintain the property; (3) is managed by the operator; (4) has a substantial amount of labor provided by the operator and family; and (5) may use seasonal labor during peak periods and a reasonable amount of full-time hired labor.

Farm/ Farmer- A *farm* is defined as any place from which $1,000 or more of agricultural products is produced and sold, or normally would have been sold, during the Census year (USDA NASS, 2018). According to NAL dictionary (2019), a *farmer* is a person who is engaged in the raising of crops, poultry or livestock.

Food Deserts- According to NAL dictionary (2019), food deserts are defined as urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food. Instead of supermarkets and grocery stores, these communities may have no food access or are served only by fast food restaurants and convenience stores that offer few healthy, affordable food options.

Food Environment- According to Rideout et al., (2015) food environments are created by the human-built and social environments. Food environments are the physical, social, economic, cultural, and political factors that impact the accessibility, availability, and adequacy of food within a community or region. Food environments may be defined in terms of geographic access to food in a community or neighborhood, consumer experiences inside food outlets, services and infrastructure in institutional settings, or the information available about food (Rideout et al., 2015).The term food environment has been described as the relationship between diet-related health outcomes and the environments within which people must make their food choices (Minaker et al., 2011).

Food hub- Regional enterprises that aggregate locally-sourced food to meet wholesale, retail, institutional, and even individuals' demand. They have become key entities in local food systems' infrastructure allowing small-scale and midsized farmers to adapt to increases in demand by outsourcing marketing to them (Low et al., 2015).

Food Insecurity-Food insecurity is defined as having little to no access to fresh, healthy, affordable, or culturally relevant food (Kent, 2016).

Food Security- According to NAL dictionary (2019), food security is defined as access by all people, at all times to sufficient food for an active and healthy life. Food security includes at a minimum: the ready availability of nutritionally adequate and safe foods, and an assured ability to acquire acceptable foods in socially acceptable ways.

Grassroots Farm Policy- The term grassroots farm policy was inspired by the National Farmers Union's (NFU) work to represent over 200,000 family farmers in 33 states. NFU (2019) describes that a key to the success and credibility of the organization has been the union's grassroots structure in which

policy positions are initiated locally; the policy process includes the presentation of resolutions by individuals, followed by possible adoption of the resolutions at the local, state and national levels.

Multiple Income Farm Family (MIFFS)- H.C Bittenbender (1993, p1) suggests that "*MIFF stands for multiple income farm family. By that I mean that both the husband and wife both have major sources of income like jobs or pensions and the farm is a third source of income. The farm is not the dominate money maker in their life, but it is an important part of the family strategy.*" Bittenbender (1993) suggest that MIFFS are the diversified agriculture silent majority in Hawaii and the U.S. mainland.

New Farmers- For the purposes of this dissertation, the term new farmer is used for a farmer who has no prior family legacy of farming from their parents. As such, a new farmer can be a person who operates a family farm but not succeeding a long line of farmers in their own family. This is not to be confused for the same term used in Hawaii. The term New Farmer is used in Hawaii Revised Statutes for the New Farmer Loan Program (HRS, Ch. 155). A New Farmer is 1) a citizen of the United States who has resided in Hawaii for the preceding three years, or any permanent resident alien who has resided in Hawaii for the preceding three years; and 2) a person who has successfully earned a degree in agriculture from an accredited university or community college; or 3) a person displaced from employment in an agricultural production enterprise; or 4) a person with two years experience as a part-time farmer; or 5) a farm laborer or tenant, or a person who by reason of ability, experience and training are likely to successfully operate a farm.

Participation - Public participation seeks and facilitates the involvement of those potentially affected by or interested in a decision by individuals, governments, institutions, companies or any other entities that affect public interests. The principle of public participation holds that those who are affected by a decision have a right to be involved in the decision-making process. Participation may be regarded as a way of empowerment and as vital part of democratic governance. When participation is facilitated it can also be viewed as inclusiveness, shaped by the desire for the participation that represent the whole community (ICC, 2019). The terms participation and bottom-up involvement are used interchangeably in this dissertation.

Small Farms- According to NAL dictionary (2019) small farms are defined as farms with less than $250,000 gross receipts annually, on which day-to-day labor and management are provided by the farmer and/or the farm family that owns the production or owns, or leases, the productive assets. In 2017, about 95% of all Hawaii's farmers earned less than $250,000 per year (USDA NASS, 2017).

Supplemental Nutrition Assistance Program (SNAP)- Federal program administered by USDA FNS that offers nutrition assistance to eligible, low-income individuals and families. FNS works with State agencies to ensure that those eligible for nutrition assistance can access benefits (Low et al., 2015).

Sustainable Agriculture- According to NAL dictionary (2019), sustainable agriculture is an integrated system of plant and animal production practices having a site-specific application that will, over the long-term— (A) satisfy human food and fiber needs; (B) enhance environmental quality and the natural resource base upon which the agriculture economy depends; (C) make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; (D) sustain the economic viability of farm operations; and (E) enhance the quality of life for farmers and society as a whole. The term is also used for regenerative agriculture, regenerative farming, sustainable agricultural production, sustainable animal production, sustainable crop production, sustainable dairy farming, sustainable farming, sustainable livestock production, sustainable plant and animal production.

Urban Agriculture- Planners often frame their work of local food planning by using the term urban agriculture. According to USDA's (2016) Urban Agriculture toolkit, small community gardens, urban farms that span several city blocks, and intensive indoor hydroponic or aquaculture facilities are all examples of urban agriculture. This fast-growing phenomenon has the potential to nourish the health and social fabric of communities and create economic opportunities for farmers and neighborhoods. But it also comes with a unique set of challenges and opportunities (USDA, 2016). According to RUAF (2019), urban agriculture can be defined shortly as the growing of plants and the raising of animals within and around cities.

Significance of the Study

Significance to Planners. This dissertation is written in a time when the opportunities for local food production and direct to consumer marketing are of record highs in Hawaii and many other locations. Demand for local food exceeds the supply, which makes it expensive and unaffordable to the poor (Guthman, 2003). The significance of improving linkages among farmers and planners can ultimately lead to enhanced local food supplies for food insecurity programs. It could also assist planners to collaborate more with farmers for targeted projects and to implement a range of other planning goals. Currently, the American Planning Association policy guide to support regional and community food systems supports seven general policies (see table 1.1).

APA's Policy Guide for Regional and Community Food Systems
1. Support comprehensive food planning process at the community and regional levels;
2. Support strengthening the local and regional economy by promoting local and regional food systems;
3. Support food systems that improve the health of the region's residents;
4. Support food systems that are ecologically sustainable;
5. Support food systems that are equitable and just;
6. Support food systems that preserve and sustain diverse traditional food cultures of Native American and other ethnic minority communities;
7. Support the development of state and federal legislation to facilitate community and regional food planning discussed in general policies #1 through #6.

Table 1.1- APA's Policy Guide for Regional and Community Food Systems (APA, 2007)

While the general policies are broad and comprehensive, food planners' focus has been to address social justice through a contemporary view of food security as access to healthy, affordable, and culturally appropriate food, particularly for low-income residents. The focus might be explained by the fact that planners have been more "at home" in urban and metropolitan areas and unfamiliar with rural and farming communities (Pothukuchi and Kaufmann, 2009, 2010). Part of the problem of food security and farm security observed by Guthman et al. (2006) is that direct-sale farmers tend to demand a higher price for their produce thus it is consumed only by those who can afford it. Some planners have recognized this problem as well. For example, Raja (2014) have suggested that planners ought to ask what can be done about bringing income opportunity to the *right farmers* and good food to the *right people*? In this regard, planners have been better at addressing the latter. Raja (2014) and several other food planning scholars have suggested that consumption of locally grown foods can reduce regional food insecurity. Consumption is an issue that planners are comfortable addressing; however, efforts have been focused on mid- to upper tiers in the food supply chain. The problem with a lack of locally grown food supplies remain (Day- Farnsworth et al., 2009) and planners have not worked to resolve it. The demand for local food far outweighs the supply across the U.S. calling for alternative farmers to scale-up local food production (Day-Farnsworth and Morales, 2016). If planners can find solutions to the lack of local food production many other aspects of the food security issue can be addressed.

The topic that this dissertation offers a different perspective that has to do with the current conceptualization of food security and highlighting the need for increased local food production through participation of alternative farmers. The problem with planners' current perspective on food security is

that it has been slow to incorporate considerations of small-scale producers and local food supply. Views on food security has been dominated by questions of access and affordability. The shift in thinking can be traced to the Rome Declaration of World Food Security in 1996 when the "Right To Food" movement gained momentum (UN FAO, 1996). The problem with inadequate built food environments i.e., food deserts has come to dominate the planners' focus as well as food security policies and programs on federal, state, and county levels. Currently, the right to food logic has been promoted with planners at the forefront to advocate for geographic areas with healthy eating options to improve the built food environments. The built food environment focus has become popular as scholars have increasingly found connections between unhealthy food choices and availability of cheap unhealthy foods (Lake and Townshend, 2006). The same idea also gained importance as the epidemic of obesity and diet-related disease became increasingly alarming alongside more traditional concerns of hunger; both hunger and obesity epidemics are more prevalent with people who suffer from economic poverty in the U.S. (Tanumihardjo et al., 2007).

Academic literature about food security as a concept has focused on perspectives that follows the Right to Food movement logic. Guthman et al. (2006) suggest that there is a tension between food security and farm security and that food localization tends to privilege farmers rather than the poor who suffer from food insecurity. The idea that small-scale farmers can contribute to improved food systems through increased local food production and direct marketing has been cautioned by several scholars whose focus is to address structural injustices in the food system. As mentioned above, multiple scholars claim that capitalist or market logic cannot address structural injustices, because these injustices are caused by that logic (Guthamn, 2004, 2008; Allen, 2010; Alkon and Norgaard, 2009; Winter, 2003; DuPuis and Goodman, 2005). Guthman (2008) and others have focused the debate on improving access to food as a the central avenue to social and food justice (e.g., Allen, 2010; Alkon and Noorgard, 2009). In that discussion, scholars have distinctively separated people who suffer from food insecurity (consumers who lack access or cannot afford food) from farmers. Separating farmers from people who are food insecure might be empirically supported in other geographical locations but not in Hawaii. In fact, in Hawaii, it is the rural and farming communities whose residents are most food insecure. The same trend of rural food insecurity outweighing urban insecurity can now be seen in the U.S. mainland but is often overlooked (Feeding America, 2019). Alkon and Noorgard (2009, pp 289) suggest that food justice "*places the need for food security—access to healthy, affordable, culturally appropriate food—in the contexts of institutional racism, racial formation, and racialized geographies.*"

There is a larger trap that planning practitioners and scholars could fall for when social and food justice is viewed narrowly as a concern for people who do not have access or cannot afford healthy food. These access dominated perspectives neglect several important aspects of the whole food system. First, food security as a concept has to incorporate a community's ability to supply food for local consumption. When food access is promoted narrowly without incorporating considerations for increased local food production, efforts fail to consider key aspect of food systems supply and demand. In addition, planners should advocate for the opportunities arising in the process of increasing local food production and small-scale farmers' ability to meet those needs. Those opportunities should be a crucial aspect of food justice because it can lower rural poverty and, in turn, food insecurity and a range of other problems facing rural economic development. In other words, planners should consider rural communities' and family farmers as partners to effectively address the community's food insecurity.

Planners can promote policies that incorporate farmers' considerations and ability to meet local food production goals by creating access to regionally and culturally appropriate opportunities and promoting sustainable livelihoods in rural areas. The aspect of food security, which focuses on food supply and producers, has emerged more rapidly in developing countries under the umbrella of rural development. In these countries, addressing justice along the food supply chain by connecting farmers and rural residents to increased market opportunities of growing food results in reduction of rural poverty. Moreover, a large share of populations in developing countries are agricultural producers (Schumacher, 1973). Ultimately, food security requires a good balance between local supply and demand. When supply and demand are not well aligned, it will result in the kinds of situations where locally and organically grown foods are rare, unique and thus expensive rendering it affordable only by the elite (e.g. Guthman, 2003). This research is offering to resolve some of this imbalance by connecting farmers and planners that could, in turn, have wider planning implications for building healthy communities.

New evidence show that current food insecurity efforts are shallow at best and destructive at worst based on Fisher's research of anti-hunger programs. Fisher's (2017) research shows the counterproductive efforts of food banks aimed at alleviating hunger and food insecurity temporarily without addressing the economic poverty that underlies hunger. Fisher (2017) suggests that current emergency food efforts perpetuate hunger rather than reduce it over time. One solution according to Fisher (2017) is to address the economic poverty that causes food insecurity in the first place. When people who suffer from economic poverty can raise their personal income as a result of economic development in their community they can create the economic freedom that allows them to purchase adequate food for themselves and their families.

Significance for Hawaii. At the present time, Hawaii is in a severe food security crisis: food imports account for approximately 90% of the food consumed. State of Hawaii Governor David Ige stated that "*..instead of continuing to import 90% of our food, we need to take steps to produce more food locally*" and created a goal of doubling local food production to 20-30% of food consumed is grown locally by 2020 (Ige, 2017). A University of Hawaii (UH) at Manoa study on agricultural self-sufficiency shows that an increase in local food purchases can greatly contribute to many jobs; Leung and Loke (2008) show that a one million-dollar increase in final farm-gate sales of locally grown fresh vegetable will generate 26 jobs. There remains a significant gap, however, between locally produced food and local food consumption; consumers in Hawaii spend $6.09 billion on food annually (local spending $3.678 billion, tourism spending $2.42 billion; Leung and Loke, 2008). Every 1% increase in food self-sufficiency— i.e., 1% increase in consumption of locally produced food— would result in $60 million in local sales and approximately 1,578 additional jobs.

The local food system presents an apparent counterpoint to large scale, more industrialized and "conventional" systems of food production and distribution (Kloppenburg et al., 1996). Some examples of local food systems include farmers markets, community supported agriculture (CSA), on-farm stores, and farm-to-table events. Farm operations that sell local food are also more likely to operate farm tours, overnight retreats, and other educational, recreational and tourism activities compared to conventional farmers (Low et al., 2015). Relations between producers and consumers are distant and anonymous in more conventional, industrialized food systems whereas in local, direct markets, they are immediate, personal and enacted in shared space (Hinrichs, 2000). Figure 1.2 shows the tiers of the food system. As indicated in figure 1.2, Day-Farnsworth and Morales (2011) suggest that the strength of direct-marketing strategies such as farmers' markets, CSAs, u-pick operations and other agritourism activities is that they help reconstruct the relationship between consumers and their food, and they can be economically beneficial for local producers. The most notable shift is the loss of transparency observed as a consumer moves from the inner spheres of the diagram, which represent personal food production and direct-marketing, to the outermost sphere, which represents highly processed, global, anonymous food products such as energy drinks, chicken nuggets, and cheese puffs (Day-Farnsworth and Morales, 2011). Incidentally, it is also worth mentioning that farmers' markets are not always profitable for producers (Day-Farnsworth and Morales, 2011).

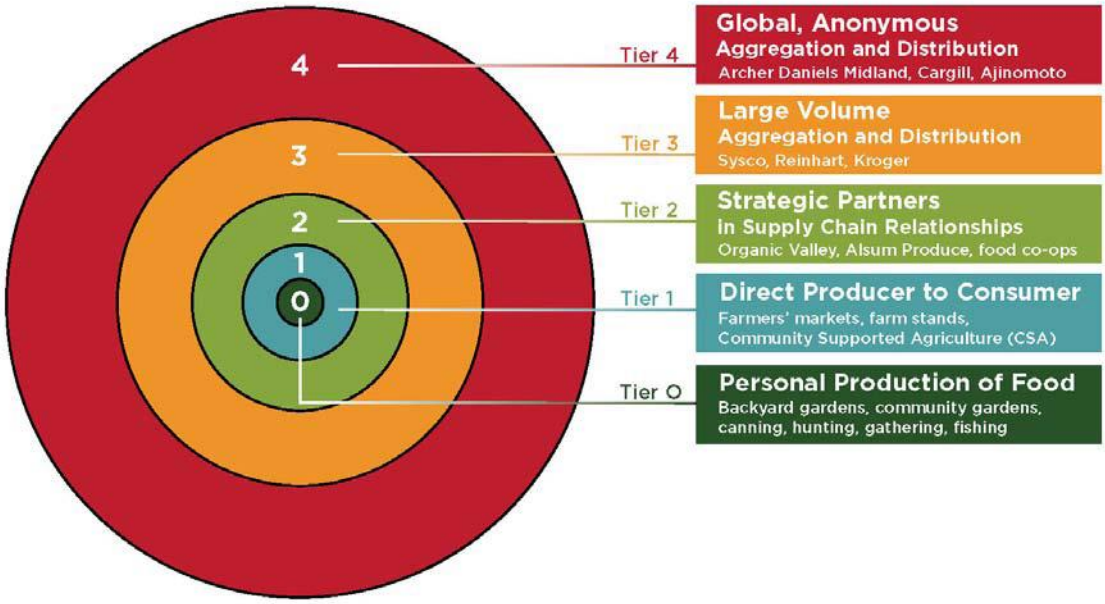

Figure 1.2- Tiers of the Food System (Day-Farnsworth and Morales, 2011)

Hawaii's local food economy is growing rapidly. Several aspects of this trend in Hawaii need more attention especially because the opportunity can result in increased government spending on locally produced foods and create new jobs in agriculture. In Hawaii, a larger share of the farmer population is involved with production for local consumption compared to the U.S. mainland (USDA, 2012). The 2012 U.S. agricultural census shows that 1,606 farmers participated in direct sales of agricultural products to individuals for human consumption of 7,000 total farmers in Hawaii. In 2015, the number of farmers selling local food further increased to 2,423 farms yet this number includes farmers that sell directly to retail, institutions and food hubs (USDA, 2016a). In addition, in 2017 another 878 farmers sold directly to retails; however, 2017 was the first year the number was recorded and there is no data to compare with 2012, 2007, and 2002.

In 2017, 2,423 farmers represents about 33% of the 7,328 farmers in Hawaii (US NASS, 2017). In 2017, the U.S. as a whole reported approximately 13,000 in local sales i.e., 6% of the total farm population. For the U.S., the number of farms in local sales decreased in 2017 compared to 2012 (USDA, 2012. 2017). For many farmers on the U.S. mainland, local sales is a form of alternative or niche market in agriculture for a fragment of the farming community (USDA, 2017). By contrast, roughly 33% of Hawaii's farmers produce food for local consumption (USDA 2016a, 2017). Figure 1.3 shows the growth of farmers

marketing directly to consumers over time but does not show farmers marketing directly to retail stores, pubic institutions and food hubs in Hawaii's local food industry.

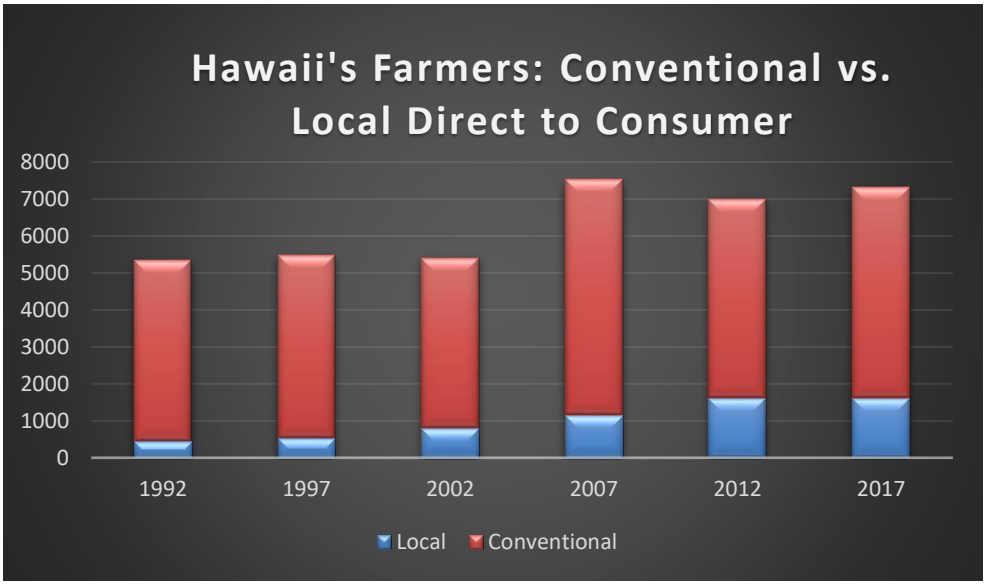

Figure 1.3- Hawaii's Farmers: Conventional vs. Local Direct to Consumer (US NASS 1992, 1997, 2002, 2007, 2012, and 2017)

Moreover, a 2015 report by the USDA's Agricultural Marketing Service shows even larger trend for the DTC marketing and sales in Hawaii (USDA, 2016a). In 2015, sales reached $84.4 million of which $22.8 million was farmers markets, community supported agriculture (CSA) and on-farm sales, and the remainder $61.4 million were sold to supermarkets, restaurants, institutions, and wholesalers (USDA, 2016a). In 2017, total local sales reached $152.4 million of which $27.9 was direct farmer to consumer marketing and $124.5 million sold to retail markets, institutions, and food hubs. (USDA 2016a; USDA, 2017). In other words, food sold directly to retail markets, institutions, and food hubs doubled in two years between 2015 and 2017 in Hawaii (see figure 1.4; USDA 2016a; USDA, 2017). Sales directly to consumers through farmers markets, CSA, and farm stands also increased between 2012 and 2017. However, while the number of operations only increased by six, 1,606 in 2012 and 1,612 in 2017, the average sales per farm increased from $8,229 in 2012 to $17,296 in 2017 (USDA, 2012, 2017). Total sales for the same category as a whole increased from approximately 13 million in 2012 to 27 million in 2017 (USDA, 2012, 2017). In addition, local sales in Hawaii constitute 27% of all agricultural sales when adding direct to consumer and direct to stores and institutions for 2017 (USDA, 2017).

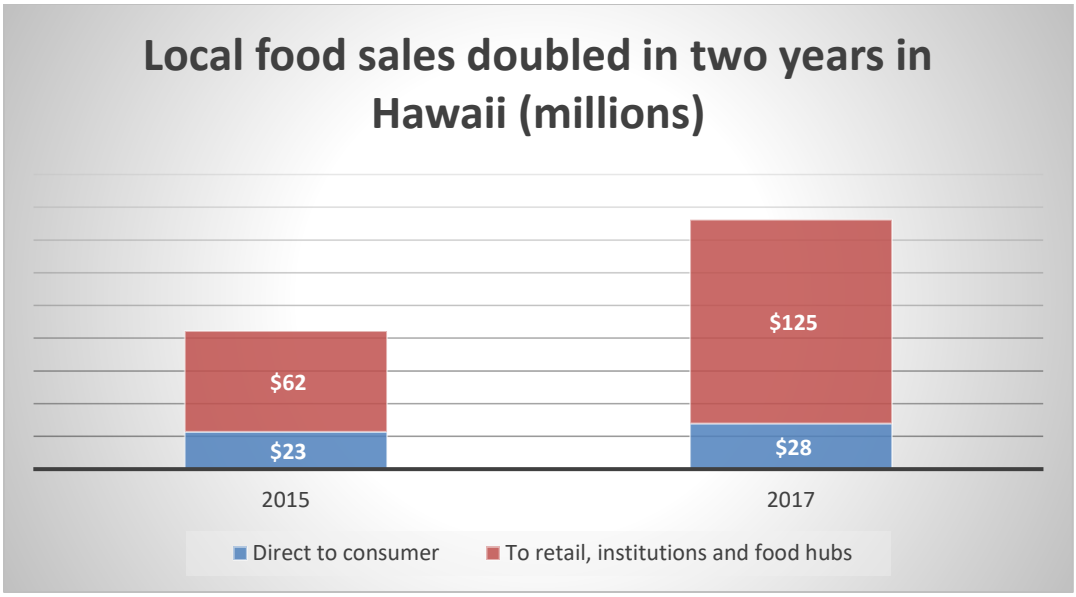

Figure 1.4- Local food sales doubled in two years in Hawaii (millions) (USDA, 2015; USDA NASS, 2017)

A farm is defined as any place from which $1,000 or more of agricultural products is produced and sold, or normally would have been sold, during the Census year (USDA NASS, 2018). The State of California that has the largest direct sales of all the U.S., $2,869 million in 2015 yet approximately 13% (10,616) of their farmers participate in local food systems. With roughly 33% of all farmers participating in producing food for local consumption, Hawaii direct sale farmer are no longer only on the fringe of the agricultural industry. The largest portion of this is directs sales by farmers to grocery stores ($124.5 million in 2017) and approximately a fifth of local food sold direct for human consumption through farmers markets, on-farm stores, community supported agriculture (CSA) and roadside stands.

While increased food self-sufficiency can greatly benefit the local economy, the goal of doubling production has its implications. The goal is partly problematic because local food production could double without the equivalent doubling of local consumption. The important goal is to increase consumption of locally grown foods to maximize the many benefits to Hawaii and the farming community. The total portion of food consumed in Hawaii that is grown locally is less than 10% (Leung and Loke, 2008). Hawaii's population is 1.4 million (US Census Bureau, 2010) and annual tourist visiting Hawaii is 9.5 million (HTA, 2018). Page et al. (2007) observed that Hawaii's farmers who participate in the local food industry can cope with economic pressure of staying afloat by selling to high-end restaurant and hotel markets. In other words, tourists are more likely to eat locally grown foods because of their ability to pay high premiums for locally and organically grown foods. Most of Hawaii's farmers

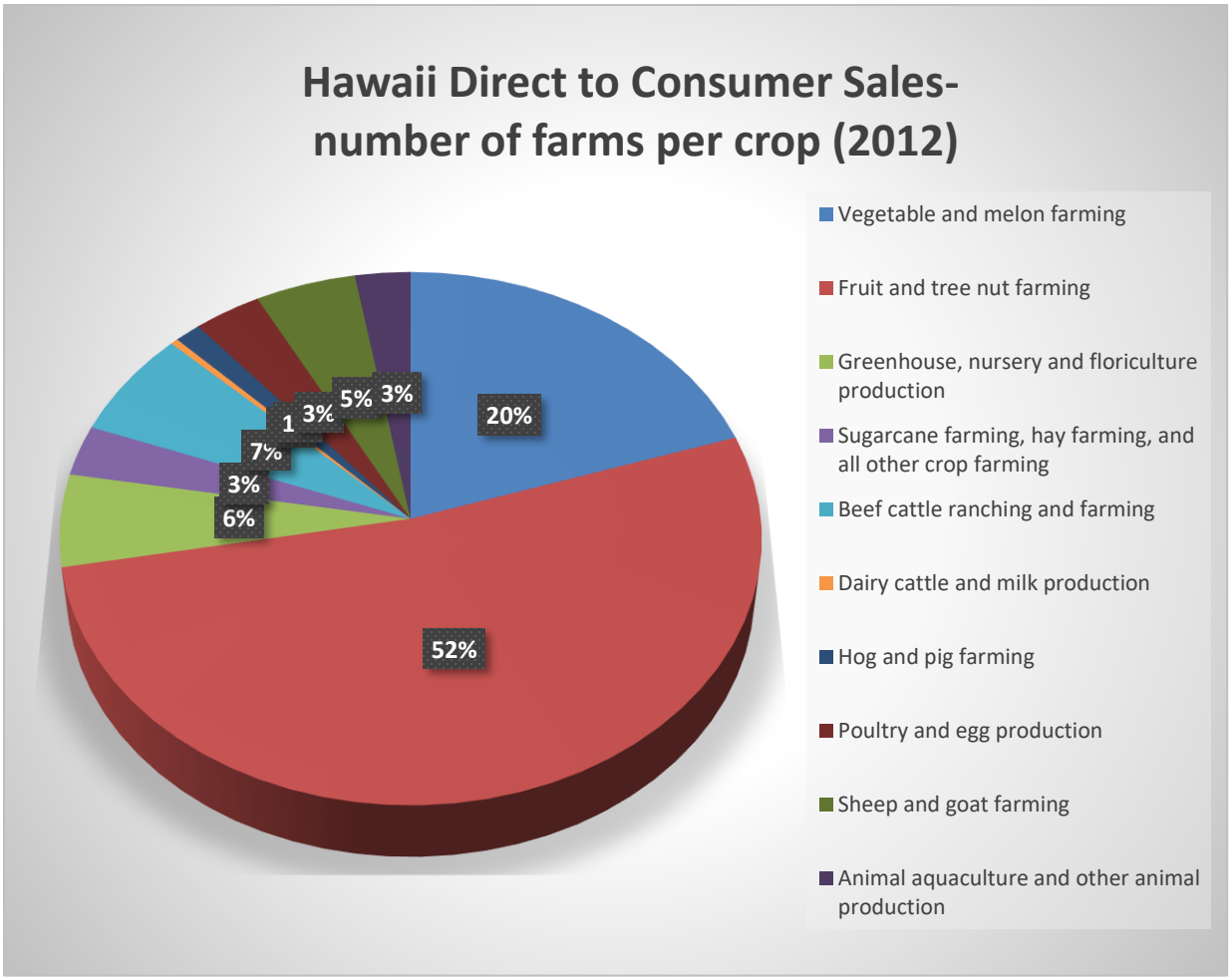

Figure 1.5- Hawaii Direct to Consumer Sales- number of farms per crop (USDA NASS, 2012)

are small-scale farmers and rely on income from outside of the farm to preserve their farming activities (Azizi, 2019; Bittenbender, 1993). Bittendender (1993) argues that MIFFS- multiple income farm families- make up the silent majority in Hawaii's agriculture but their impact on food security is commonly ignored. The Lincoln and Ardoin (2016) study explored different types of sustainable agricultural operations and developed a five-class farmer typology: classic farmers, hobby farmers, leisure farmers, progressive farmers, and subsistence farmers. Typologies were developed based on people's motivations for farming including factors such as sustainability and sense of place. While the classic farmers are described as more conventional farmers focused on export agriculture, other types of farmers contribute to increased food security and self-sufficiency. In additional, Lincoln and Ardoin (2015) show that multiple typologies and farm styles in Hawaii align with the concept of multi-functional agriculture (discussed later in Chapter 2). Several good things could result from Hawaii's push to double production of local food. It has led to policies permitting local institutions such as schools, hospitals, and prisons to purchase local food, which, in turn, means more spending on locally grown

foods. But if the push to source more local food means more opportunity for local farmers or MIFFS, especially those who are small-scale, beginning farmers, socially disadvantaged farmers, or food insecure farmers remains a question. People have questioned Hawaii's farmers ability to succeed with any form of unconventional agriculture and transition beyond its historical legacy of industrial sugar and pineapple plantation agriculture. For example, Suryanata (2002) described the situation as a 'pocket market problem', Hawaii farmers have no competitive edge outside of Hawaii and can also likely not compete within Hawaii because of advances in distribution that allow conventional farmers from the U.S. mainland to provide food at lower prices.

Historical trends for agriculture in Hawaii show that while agricultural production for local consumption has increased, conventional agriculture industries have declined. This can be seen in the trends of reduction in conventional farm size (figure 8.3- see Appendices 1) and reduction in average conventional farm income (figure 8.4- see Appendices 1) over the last half decade. The decline in conventional agricultural activity can also be seen in Meter's report on Hawaii food system (CRS, 2017). Meter points out that Hawaii farms have not fared well in recent years and shows a graph of declining net farm incomes included in the Appendices 1 (CRS, 2017). Data for Hawaii is available from 1969 to 2015, as shown in figures 8.5 and 8.6 for net farm income (see Appendices 1). In CRS (2017) two net farm income charts shows a steady decline of farm income in Hawaii over the last fifty years in general and the last ten years in particular given the rise of production costs. Figures 8.5 and 8.6 show that income peaked in 1974 and 1980, when sugar prices experienced a temporary rise (CRS, 2017). Income returned to similar and steadier levels during the years 2005 –2007, but then began to decline sharply, even while production costs rose suddenly (CRS, 2017). By 2008, Hawaii farms were spending $200 million more each year to produce crops and livestock than they received by selling these products (CRS, 2017). Farmers suffered a total $1.8 billion loss from 2008 – 2015. This certainly was not positive news for Hawaii farms, but it was only the most dramatic element of a decline in net cash income that had been underway since 1986 (CRS, 2017).

Significance for rural revitalization. Recent trends show that rural and farming communities suffer from a higher rate of food insecurity compared to urban (Feeding America, 2019); however, these communities have been somewhat invisible to planners who feel more at home in urban areas and who view rural issues as not their turf (Pothukuchi and Kaufman, 1999). Promoting local food systems could bring much needed economic opportunities to rural areas and spur community economic development

and entrepreneurial activity. This dissertation views the increase in local food spending as crucial opportunity in rural areas especially in Hawaii. The role of planners could be to facilitate that opportunity. This section provides a socioeconomic description of rural communities in Hawaii using Waianae as an example. The Waianae Coast has a population of 54,505 (US Census, 2010) and is home to several communities including Kaena 5,986 people, Maili 10,289 people, Makaha 6,386 people, Makua Valley 2,834 people, Lualualei 9,293 people, Waianae Kai 6,635 people, and Nanakuli 7,400 people. While the health of people in Hawaii ranks very high when compared to the rest of the U.S., people on the Waianae face a disproportionate burden. The following describes the communities of Nanakuli and Waianae (UH Manoa, 2003):

> "*The percentage of unemployed persons is more than double the State average, and the per capita income is the second lowest in the State. Almost half of the families here receive food stamps; the area is ranked fourth-highest in the State for Temporary Assistance to Needy Families (TANF) recipients. Almost 70% of the adolescents from this community who responded to a Statewide student survey reported neighborhood problems with fighting, graffiti, and crimes. Child abuse rates are high, and teachers' and parents' reports of school safety are among the highest in the State. Third-graders do poorly on their SAT tests, and fewer adults in this community have a high school diploma or college degree than in most other communities*."

Indigenous Peoples of what is now the U.S. include American Indians, Alaska Indigenous Peoples, and Indigenous Peoples of Hawaii. The Waianae Coast has the largest concentration of Indigenous Hawaiians; 22.5% of people are Indigenous Hawaiians compared to 6% for all of Hawaii; 55.7% of people are Indigenous Hawaiian alone or in combination with 1 or more other races compared to 19% for all of Hawaii (UH Manoa, 2003). Compared to Caucasians in Hawaii, Indigenous Hawaiians experience excess deaths from heart disease, cancer, diabetes, infant mortality, and accidents (Heckler, 1985). In 2003, UH Manoa reported an annual income of $13,027 for residents on the Waianae Coast; in other words, the average person earns $80 above the monthly the U.S. poverty level. In the same year, every third child was born into poverty. (UH Manoa, 2003). Food insecurity is well documented on the Waianae Coast. More than 50% of residents are SNAP recipients (UH Manoa, 2003). Low-income regions tend to be void of stores that sell affordable and healthy fresh food (Minaker et al., 2011). The last statement is true for the Waianae region where more people suffer from food insecurity, which, is defined as having little to no access to fresh, healthy, affordable, or culturally relevant food, than in the rest of Hawaii (Kent,

2016). The exorbitant price of food and cost of living on Oahu only compounds the issue of food insecurity (Kent, 2016); in Waianae 33% of people live in households that are considered food insecure and, among ethnicities, Indigenous Hawaiian families have the lowest average family income (Baket et. Al., 2001).

Communities like Waianae are also known for food production. Waianae was historically known as the food basket of Oahu. Farmers and their families make up the rural population. Even though there are high rates of food insecurity in Waianae, there are many people growing food for subsistence and an abundance of land ideal for farming. Moreover, growing and selling products is a source of income in a rapidly growing local food industry. This dissertation will increasingly argue that development in rural communities and the local farming sector could indirectly be a solution for decreasing food insecurity in the area through community based economic development. That is because as farmers increase production of their operations they can employ more people, which in turn can be a livable income for families.

Naturally grown and culturally relevant food has the potential to improve health conditions while providing an opportunity to engage in culturally restorative subsistence practices. To improve Indigenous Hawaiian Peoples health, Dr. Terry Shintani has promoted a Hawaii specific diet. Compared to Caucasians in Hawaii, Indigenous Hawaiians experience excess deaths from heart disease, cancer, diabetes, infant mortality, and accidents (Heckler, 1985). Dr. Shintani (Shintani et al., 1991) argues that much of this is diet-related. The Hawaii diet is based on fruits, vegetables, and proteins that were historically prevalent in the Polynesian diet. As people change diet back from a Western style fast-food diet to a more culturally Hawaiian diet through Shintani's program they often become healthier in a sense that they reduce high blood pressure, reduce prescribed medicines, reduce diabetes, and reduce the risk for heart attack (Shintani et al., 1991). Working the land and producing local food on farms have healthy side benefits too. Such is the case as illustrated in a yet to be published study conducted by Dr. Juarez Ruben and Dr. Alika Maunakea with MAO Organic Farms located in Waianae. The study demonstrated how farming and consuming the food grown, have positive health outcomes for farm interns and their network of family and friends. Measuring BMI, blood pressure, mental health, gut microbiome composition, diet, among other factors, the study demonstrated a 60% decline in the risk of contracting Type 2 diabetes (University of Hawaii, 2019).

In 2017, Indigenous Hawaiian farmers made up 10% of the farmers in Hawaii (USDA, 2017). One of the general policies that the American Planning Association's guide for regional and community food systems is to preserve and sustain traditional food cultures (APA, 2007). Better linkages among Indigenous Hawaiian farmers and planners allows planners to better serve the Indigenous communities in rural areas. People in rural areas who are on the fringe of food production systems only need a little push to participate in the local food system as producers. Some of these people have been farmers and active in a local food system that was once thriving but been in decline since the 1950s. Many people live in rural areas with other social problems such as broken families, unemployment, economic poverty, substance abuse, unaffordable housing and homelessness (UH Manoa, 2013). Some of these problems can be traced to the disappearance of work and livelihood opportunities in food production as imported foods outcompeted local food production. With the rise of the local food economy, there are ample opportunities to revive local food production systems in rural areas that can economically benefit local communities and result in more thriving farmers.

What is Done Differently in this Dissertation?

Hybrid roles of the research. This research has benefited from the principal author's hybrid theoretical and practical experience while he was a PhD candidate with University of Hawaii at Manoa simultaneously he was selected for the job as the Kahumana Farm Hub (KFH) manager and the Policy Committee Chair with Hawaii Farmers Union United. Local government engagement in community food systems is sometimes led by people who play multiple roles of scholars and practitioners, which is viewed as an innovation in community food security research (Raja et al 2018). Moreover, the hybrid roles of the researcher being a community activist is promoted by Indigenous Hawaiian research methods such as in Kahakalau (2019). KFH was not a designed research intervention, rather the author was selected as the person to launch the food hub project at Kahumana while simultaneously conducting this research.

Focus on rural communities. One innovation that this research is that it highlights food insecurity among rural residents and inside farm families, not just as a metropolitan or urban problem. In fact, food insecurity is a bigger problem in Hawaii's rural communities such as Waianae, Nanakuli, and Waimanalo compared to urban Honolulu (Kent, 2016). In the rural areas, thriving farmers and good employment opportunities in the local food economy can provide a long-lasting solution to food insecurity than the temporary remedy of SNAP programs. The idea is not to entirely do away with

SNAP programs as they provides immediate support for families with immediate needs; however, if planners work with farmers and rural residents to grow the local food supply there should be less food insecurity and SNAP payments needed in the long run. As a result, a *deeper* perspective to resolve food insecurity in rural areas should focus on empowering communities with the resources and opportunities to produce for their own needs i.e., increasing the community's capacity for self-sufficiency. Rural communities in Hawaii identify with being food producers and have a historical legacy of feeding themselves and sustained large populations (Stannard, 1989). The high demand for locally grown foods gives ample opportunity for increased local food production that has several other beneficial community outcomes including reduced poverty, sustainable agriculture, improved food security, and last but absolutely not least, cultural perpetuation.

Focus on bottom-up grassroots farm policy and food security. Food security starts with farmers for without food producers there can be no food to secure. This dissertation offers some perspectives for policy development and program implementation to increase food security based on the input of real farmers who operate small, family farms. This dissertation highlights the multiple perspectives about food security from the standpoint of different stakeholders. Another discussion concerns the author's community engagement through personal involvement in rural communities and the importance of building relationships between the researcher and the community. After leaving university dorm life, the author first became a farmer, a cheese maker, a farm-to-table chef and a special needs support worker with a focus on organic agriculture. Then, he was hired to start a community oriented food hub in Waianae on Oahu. He was also elected Vice-President of Hawaii Farmers Union United Waianae Chapter, and appointed the HFUU State Policy Committee Chair. That position allowed him to participate in the 2019 National Farmers Union (NFU) Convention Policy Committee with the development of national agricultural policies.

The author also participated in a local food alliance among several diverse stakeholders called the Hawaii Good Food Alliance as a representative for Kahumana Organic Farms. This group includes several food banks, organic farmers, food hubs, and health experts across the Hawaiian Islands. Some of the author's anecdotal involvement is described in Chapter 4 to highlight connections between personal involvement, research, and relationships in rural communities. During the time of his personal involvement, the author conducted research simultaneously through an ethnographic and embedded community participatory and action based research approach. Serving on the NFU Policy Committee in

2019, an organization with a century of experience in bottom-up representation of family farmers in the U.S. on County, State, and National levels, allowed the author to learn more about grassroots farm advocacy that he later utilized with the Farmers Union in Hawaii. One of the strengths of planning research is bottom-up representation in the community (Friedmann, 1995). When this strength is combined with NFU's grassroots farm policy experience it can offer even stronger political representation for family farmers to address issues of food security and a potential for future joint efforts among farmers and planners.

Focus on policy incentives to grow production. Policy solutions is an urgent project given the push for State to increased local food purchases in Hawaii. This dissertation takes a different look at policy to understand how increased production can be incentivized. It is different from conventional farm policy which is often associated with government payments and subsidies to create a safety net for farmers and solving problems of over production. Policy incentives to grow production are especially focused on the Hawaii situation of local food shortages and looks at specific policy ideas to increase food production. For example, if farmers suggest that they could grow more food when they receive access to agricultural rate water, that would be a situation where resolving issues of access to water could increase local food production. However, not all farmer needs relate directly to increasing food production, this dissertation focuses on those situations that more directly result in increased production.

Research Approach and Methods

One of the central action items in this dissertation is to identify pathways for planners to increase local food production. Planners and APA (2007) suggests the importance of community participation in all policies. In this dissertation, community participatory research was used to assist a community with addressing its concerns. This was done by using approaches that allow research participants to be involved in shaping the focus of the study, but also by developing good relationships with the research population that allow for continuous back and forth exchange of information to validate any proposed solutions. Thus, this research is an ethnographic, embedded community participatory and action based approach. Figure 1.6 shows the dissertation timeline and includes the author's personal involvement for the last decade. This research follows an inductive style of reasoning because it explores the worldviews and activities of those directly involved including the author and then works to resolve or address their concerns. Because of the exploratory, collaborative, and immersive nature of this research, some relevant theories arise later in the dissertation rather than

up front. These interactive components of the research design do not only constitute an innovative approach whereby the participants can speak their own truths but also a limitation. Limitations are discussed at the end of this section.

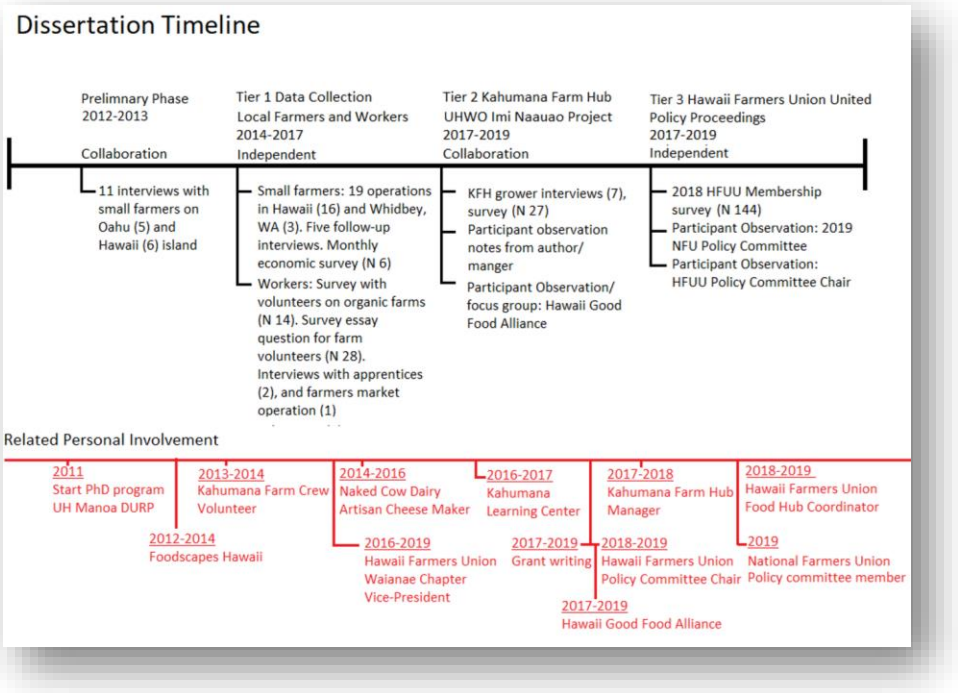

Figure 1.6- Dissertation Timeline shows data collection from four different phases in this project and also shows the authors personal involvement alongside dissertation milestones.

Research values. Central to the design and approach of this dissertation is the notion that farmers and rural communities have been largely invisible to planners and critically needed to be represented. The following set of values and principles guided the choice of research methods:

1. **Fairness**-fairness guided the selection of methods that allowed people to speak their own truth in a way that was comfortable for Hawaii's people in rural communities.
2. **Participation**- use methods that allowed farmers to voice their own accounts and realities.
3. **Bottom-up**- use methods that allowed worldviews and perspectives of those involved to produce generalizations for others.
4. **Lived reality**- use research that gave attention to the essence of human activity rather than abstractions of experience.
5. **Action Based**- use methods that allowed urgent problems and solutions to be emphasized in the research methods.

6. **Relational**- build relationships that allow problem solving and proposed solutions to be validated, collaborated, and evaluated by the research population.
7. **Accurate**- allow problems and solutions to be strengthened through multiple and diverse sources of data that can be compared and pivoted against each other to further contrast each finding.
8. **Collaborative**- allow multiple perspectives in the research through team work.

Participatory action research (PAR) was a natural fit for the dissertation. PAR include mixed methods of interviews, participant observation, focus groups promotes participants as co-researchers to voice concerns and determine urgent problems and solutions. In addition, PAR promotes author active involvement in problem solving, and also encourages moving from specific situations to generate meaningful generalizations. For a more grounded approach to PAR, the research method of Maawe Pono was adopted. Maawe Pono, described further below, promotes a deepening of the PAR method that includes specific place-based knowledge about Hawaii and its people. Maawe Pono guided the researcher to more fairly represent the population, especially rural populations, and conduct research in ways that Hawaiian communities are comfortable with (Kahakalau, 2019). In addition, phenomenology inspired the research methods as it is well suited for capturing the lived reality of people and providing rigorous descriptions of human life as it is lived in first-person concreteness, urgency, and ambiguity (Seamon, 2000). In addition, mixed methods supported multiple, diverse data collection, cross-comparisons, and evaluations. These methods are discussed in more detail in Chapter 3.

Preliminary Studies. Data for this research was collected through four different stages over a period of seven years. In December 2011 and January 2012 the author and Dr. Mary Mostafanezhad performed a set of pilot interviews with small-scale farmers that host agricultural volunteers and interns and on their farms. The purpose was to explore economic viability of small-scale farmers in Hawaii who operate with volunteers and interns (Azizi and Mostafanezhad, 2015). Interviews were conducted on the islands of Oahu and Hawaii island. Six direct-sale farmers were interviewed on the Island of Hawaii and five farmers on Oahu. All interviews were performed on the farm location and often included a farm tour. Oahu was chosen for its prominence as a tourist destination and Hawaii island because it has the most productive agriculture industry in the Hawaiian Islands. The farmers were selected using snowball sampling. As an exploratory study, snowball sampling is a useful method for gaining access to research participants through word of mouth (Bernard, 2006). This study resulted in four peer-reviewed publications including: Azizi and Mostafanezhad, (2015); Mostafanezhad, Suryanata, Azizi and Milne

(2015); Mostafanezhad, Azizi and Johansen (2016); and Mostafanezhad, Suryanata, Azizi and Milne (2016). For the purposes of this dissertation, the author stayed connected with the farmers in the study. Most of the farmers had just started their farm operation and the author was interested in their journey to success. During this stage, the first research participants contributed to study design as they revealed discussion items that were relevant and irrelevant.

A phenomenological approach helped to guide the early data collection stage of this research (Azizi and Mostafanezhad, 2015). It was a helpful guide to a research design that allows the research population's lived perspectives and goals to become part of the research design. Phenomenology became popular as the need to describe human relationships to place and the local environment became more urgent: a phenomenological approach holds "*that people and environment compose an indivisible whole*" (Seamon, 2000: 1). Franck (1987, p 65) argues that a phenomenological approach gives attention "*to the essence of human experience rather than to any abstraction of experience*" and is well suited for environment-behavior research with the goal of providing a rigorous description of human life as it is lived and its first-person concreteness, urgency, and ambiguity (Seamon, 1979; Li, 2000; Seamon, 2000). In this study, early interview participants were considered 'co-researchers' rather than research 'subjects' as a phenomenological study seeks to establish a supportive context in which people can build on each other's insights (Seamon 1979; Li, 2000). As the participants may perceive the researcher to be an 'expert' and thus be reluctant to offer their opinions, 'self-exposure' procedures were utilized to reduce the power differentials between researchers and research participants (Li, 2000). For example, the researchers attempted to share personal backgrounds and exchange stories with the participants in 'coffee shop-style' conversation to develop mutual dialogue (Li, 2000).All research participants in this study were anonymous based on their own preference.

The farms ranged from hobby farms to semi-commercial farms that all included forms of DTC business models. Arrangements were made over the phone for the researchers to visit farmers and other related people to conduct an interview. All of the interviews were conducted on site except for one phone interview. Interviews were conducted in a private area with only the researchers and farmer. All interviews were digitally recorded for accuracy. Rather than a fixed set of questions, the researchers had a number of themes that they sought to discuss with the farmers. It was to the researchers' advantage that all of the farmers addressed most of the themes without directly asking about them. Conversational style interviews were an effective interviewing technique that worked well for both the researchers and

the farmers whom, on several occasions, suggested that they were not interested in formal interview questionnaires or surveys. All interviews were transcribed into a word processing program. Each transcribed interview was 7,000-9,000 words. Once transcribed, each document was coded for emergent themes. Recurrent themes were extracted from the interviews: these are topics of conversation that were repeated in several interviews and thus were deemed important. For example, each farmer that relied on volunteers as a workforce discussed the importance of screening new applicants before accepting them to the farm. Because each interview was extensive and not all responses could be comparatively analyzed, the researchers had to use their judgment to sort out the most relevant themes. The purpose of extracting themes from the transcripts instead of rigidly trying to force each interview conversation to follow prechosen questions enables the researcher to understand the farmers lived experiences from a phenomenological standpoint whereby experiences are meaningfully ordered by the person that experiences them (Li, 2000).

Tier 1- Data Collection: Small Farmers and Workers. Until this stage of the dissertation the proposal was only to study four farmer operations on the island of Oahu partly because the limitations of funding. Experienced researchers at College of Tropical Agriculture and Human Resources (CTAHR) at UH Manoa, however, recommended that a larger number of local farmers be included in the study. The author received a research grant from a private foundation in Sweden that allowed more research in Hawaii and one other state in the U.S. Using the same methods as outlined in the preliminary studies based on a combination of PAR and phenomenology, twenty-five interviews with nineteen small-scale farmer operations were conducted in 2014-2017. Five of these interviews were follow-up interview with farmers from the preliminary stage. Moreover, three interviews were completed with small-scale farmers on Whidbey Island (WA) to better understand differences and similarities among DTC farm operations in in Hawaii compared to the U.S. mainland. In addition, a separate data collection form monthly economic spreadsheets was developed to better understand internal revenues and expenses of the farm. The economic snapshot was based on the U.S. IRS tax categories in Schedule F: Profit or Loss from Farming. A majority of study participants filled out the form with the knowledge that their information would be anonymous; however, some did not want to share it at all (see form Monthly Snapshot Figure 8.9 in Appendices 2). The snapshot collects data on farmers current income and expense numbers and provides a column for goals or desired numbers. The desired section was an experiment to encourage farmers to express anticipated incomes and expenses. In some interviews, the

monthly snapshot provided context to the interview and structured the conversation. Six farmers (N 6) completed the economic snapshot.

During this stage, interviews were conducted with one farmer's market manager, and two experienced farm apprentices: one in Hawaii and one in Whidbey Island. The apprentices were experienced because they had worked at over a handful farms each. These interviews were conducted to get a deeper understanding of the motivations behind this form of service learning and also understand, from an apprentice point of view, what constitutes a good farm stay. Interns and apprentices on DTC farms has been on the rise and is often part of farmers strategies to train their own workforce while coping with the high cost of operating in both Hawaii and in North America (Azizi and Mostafanezhad, 2015; Ekers et al., 2016). During apprenticeship interviews the host farmer was usually also interviewed. Farmers markets are popular direct markets and an important marketing outlet for small-scale farmers; an interview with the market manager was conducted to better understand the perspective of a farmer's market operation and manager. In addition, major farmers markets on Oahu were surveyed in 2015. The purpose of this survey was to collect information on the number of vendors that were farming compared to other vendors.

Several surveys were conducted during this time with volunteers, interns and apprentices. In 2014, a survey was done with fourteen (N 14) agricultural volunteers on small-scale farms in Hawaii. The survey explored volunteer demographics, motivations, and experiences on organic farms in Hawaii. A follow-up survey was conducted with twenty-eight (N 28) volunteers to answer two short essay questions. The first questions asked the helpers if their volunteer experience was different than they expected and the second question put the volunteer in the position of the farm manager and asked for their perspective on how the role of a farm manager can improve the volunteer farm experience. The responses from these surveys are presented in the results in Chapter 5.

During 2014 to 2016, the author worked with a local farm operation called Naked Cow Dairy in Waianae, Oahu and attended a weekly farmers market in Pearl Ridge. Several relationships formed with farmers at the market led to their participation in interviews. On average the farmers had 3.8 acres in production and often extra land that was not in production. The median farm size was 3 acres in production. The smallest farm was less than ½ acre in production and the largest farmer had ten acres in production. About 75% of farmers had private ownership of the lands they operated on, four of the remaining five

farmers operated on privately leased land and one farmer had a public lease. Farmers had operated 7.8 years on average and 5 years median. The longest operation was thirty years and the shortest was less than one year. All but three farms had operated less than ten year and thus 84% of the farmers are considered beginning farmers with less than 10 years in operation at the time of the interview. Almost 90% of farmers were new farmers in that they had not had parents who were farmers or any family or plantation legacy of farming. About 95% of farmers operated with volunteers and interns either from outside the farm or unpaid help from within the family. Intern programs including stipends were often developed by farmers as an extension to existing volunteer programs for volunteers from outside the farms. Some farmers had these programs alongside paid labor; only 58% of farmers operated with paid labor. Almost a third of farmers had non-profit organization and several more had plans of incorporating non-profit status in the future. About 37% of farmers had received grants and in some cases they were not non-profit operations (for more details of the data collected, see table 3.1 farm description summary).

All farmers in the study were fully committed to direct-to-consumer sales and sold all their products locally on-farm, in grocery and health food stores, at local farmers market, through CSA subscriptions and to hotels and restaurants. Most farmers engaged in two to four different types of direct marketing. About 63% of farmers had developed their own value-added products from foods that they produced on the farm. Another 37% of the farmers had on-farm tourism, which varied from education and recreational tours to bed & breakfast operations and retreats. About half of the farmers were certified organic and about $124k average annual revenue of the twelve farmers that reported it. The median annual revenue was $48k and the largest reported at the times of interviews were $360k. The total revenue of the twelve farmers that submitted numbers from Hawaii was approximately $1.40m in local sales- about 2% of $84.4m local sales in Hawaii at the time (USDA, 2016a).

The average age of farmers were 45 years old with the oldest at sixty seven years old and the youngest farmer twenty-five years old. About 85% of farmers were well-educated with a bachelor's degree or higher- only one farmer had a directly related degree in agriculture most had degrees in the liberal arts, and a couple farmers had master's degree and one farmer had a PhD degree. Most farmers suggested that their educational background urged them to take action to create a more sustainable world and learning food production came later. About 37% of farmers were female operated farms with a female owner. Most farmers' ethnicity was Caucasian, but also Hawaiian, Chinese, Portuguese and mixed. Five of the nineteen interviews were with farmers from preliminary stage of the study described above. This

purpose of these interviews was to check-in with the farmers and see what progress they had made since the first interview. The author also wanted to understand whether farmers faced different challenges during a different time of their farm life cycle. The idea of developmental life cycles or "stages" of development in the local food movement had been studies by Tovey (2002).In some cases five years had passed since the first interview and farmers shared their experience and insights to making it through different life cycles or stages of a local farm operation.

Tier 2- Kahumana Farm Hub and UHWO Imi Naauao Project. Kahumana Farm Hub (KFH) is a community oriented food hub in Waianae that helps to facilitate the marketing and sale of locally grown foods on behalf of small-scale farmers and backyard or residential growers. It started in January 2017 when the author of this dissertation was hired as the farm hub manager. It was funded by the USDA Specialty Crop program to assist beginning and socially disadvantaged farmers in Waianae. A parallel research project with the University of Hawaii at West Oahu (UHWO) called Imi Naauao- Hawaiian Knowing and Wellbeing, started in the summer 2017 and KFH was one of four well-known community based projects from Waianae involved in this research project. The three other projects were MAO organic farms, Kaala Cultural Learning Center, and KUPU project. The project was funded by Kamehameha Schools. The KFH portion of this research examined the relationship between culturally centered economic development and Indigenous Hawaiian wellbeing.

The research team consisted of Principal Investigator Dr. Christina Mello from UHWO, student assistants Shea Lah Kama, Anthony Amos, and Malia Mokuahi, and the author of this dissertation. The team was tasked to identify solutions for improving economic wellbeing by supporting ʻāina (land) based practices. The team explored economic opportunity possibilities through Kahumana as a nearby resource in order to highlight both existing community assets and regional growers' needs. The data collection that contributed to this dissertation consisted of forty participant observation notes, seven interviews and one survey (N: 27).

Designed to highlight agricultural abundance in Waianae, rather than focus on existing socioeconomic disparity, research also incorporated Maawe Pono, the guiding methodological and theoretical framework for the larger Imi Naauao project. Talking story took precedence over formal interview; the interviews included stories of place, land use, needs, assets, and water. Therefore, the questions intended to document a sense of place as it relates to land use were not consistently asked for examining trends in responses. Thus, the interviews were coded as field notes and later used for

capturing verbatim quotes. Malia Mokuahi and Anthony Amos, student research assistants, later assisted with transcribing the interviews. Overall, the team hoped to learn the ways that local food production can increase economic wellbeing and collectively improve individuals' overall wellness in terms of health and social conditions. Findings will be used in future work that assists farmers with developing small businesses, as well as follows up on additional major questions that result from this research. A separate Internal Review Board approval was sought for this project and was received exempt waiver with the University of Hawaii System in September, 2017. In the final Imi Naauao report two articles were published in collaboration with this dissertation (see Mello et al., 2019 and Azizi, 2019).

Maawe Pono. A community oriented research approach should include an explanation of how the researcher positions himself or herself (England, 1994). In this dissertation, the researcher takes the role of a facilitator and the people who have participated in this study are considered the topic experts and co-researchers. Individual listening sessions, farm visits, and "talk story" with farmers allowed a dialectic relationship between research and the research population to be developed. Within the scope of participatory and community oriented research, an Indigenous Hawaiian research method called Maawae Pono- treading the path of honor and responsibility, allowed the researcher to deepen trust and rapport with communities especially in the work with the Kahumana Farm Hub and research of Imi Naauao project. An important argument for dialectic research methods such as "*talk story*" in Hawaii has to do with the fact that it is the most preferred method by those communities (Kahakalau, 2017) Thus, the Maawe Pono research method is suitable for community participatory research in Hawaii and for Hawaii (Kahakalau, 2017).

Many times the author pondered on what it means to go deep into community participation in Hawaii. One interpretation is that it has to do with identifying whatever barriers for underserved communities to participate in economic development in the local food sector. With the help of Maawe Pono this research has been more community-led, co-designed by co-researchers, interpreted and categorized with participants, and presented to the community for validation of results, further input and next steps. The community has been involved in every aspect of research from design to giving feedback on finding and suggesting improvements. One of the goals of this dissertation has been to write it in a way using language and terms that allow for community input in the process of analyzing and categorizing. Maawe Pono methodology encourages community feedback and validation; one of the key procedural steps encourages the researcher to publicly present initial results and seek people's input, feedback and

potential changes. This action research should be able to voice the contributions, concerns, and challenges of farmers in Hawaii without too much abstraction. Community planners value this kind of innovation in methods that ultimately contribute to enhanced bottom-up participation.

Imi Naauao. Imi Naauao means "wisdom" or "knowing" in Hawaiian. The UHWO research did not only include an Indigenous Hawaiian research method of Maawe Pono but also an Indigenous way of organizing and facilitating research among a group of twelve community scholars and practitioners. Our facilitator was Dr. Manulani Meyer— an Indigenous Hawaiian female leader and professor at UHWO. She organized over ten joint meeting in the years 2017-2018. Each meeting started and finished with Hawaiian chants. She facilitated common understanding and new friendships among all people in the Imi Naauao project. She asked all the community organizations involved to reflect on not only their individual mission but to come up with a collective vision for the Waianae community.

She asked all academic people involved to strive beyond their traditional ways of activism and do more. Dr. Meyer suggested that we all have our own Kuleana— Hawaiian for "responsibility"— and that lack of funding should never come in the way of one's activism and pursuit of Kuleana. After the meetings some leaders would say: "*we are stronger collectively.*" Community practitioners would come out of the meetings and say: *"I enjoy policy work now, let's do more of it."* Dr. Meyer together with Dr. Kahakalau instilled the idea with all Imi Naauao participants that Indigenous Peoples way is to pool resources to achieve the change the community seeks. Dr. Meyer was a spiritual and transformative leader for the people involved in Imi Naauao. Because of her, many new friendships formed. She is a transformational facilitator and her way of organizing Imi Naauao set a new precedent for the author of caring community scholarship. In turn, the author tried some of the innovations from Imi Naauao in the next data collection tier and in facilitating collective discussion among food hubs in Hawaii. This project also facilitated new friendships among community-based organizations that in part led to support for the Hawaii Good Food Alliance.

Hawaii Good Food Alliance. During the Imi Naauao project, coincidental movement with some participating organizations coalesced to form the Hawaii Good Food Alliance (HFGA). The HFGA is a diverse group of people who share in the production, aggregation and distribution of food to re-build thriving community food systems. HFGA join—with a sense of urgency—to raise community voice and support one another in the belief that each and every person in Hawaii can share in healthy, locally produced food. The alliance work is in part to connect good food from local farmers to people who cannot access or afford it. During the Imi Naauao project the author was also involved with HFGA and

wrote several participant observation reflections about the proceedings. For the purpose of this dissertation, the alliance can be understood as a collaborative policy focus group; however, the author participated in the group as KFH manager and farmers union liaison and not as a researcher. Nonetheless, the group was successful in deciphering the many local food systems issues into prioritized action items that would benefit farmers and people who cannot afford locally produced foods. These action items will be discussed in the final chapter of this dissertation.

Tier 3- Hawaii Farmers Union United. The Hawaii Farmers Union United (HFUU) is a statewide organization formed in 2010 as a nonprofit corporation formed under Hawaii law that is tax exempt under federal law. It advocates for the sovereign right of farmers to create and sustain vibrant and prosperous agricultural communities for the benefit of all Hawaii through cooperation, education and legislation. HFUU has grown to 1,500 members in thirteen local chapters statewide. HFUU (www.hfuuhi.org) is part of the National Farmers Union (est 1902), AKA the National Farmers Educational and Cooperative Union of America. www.nfu.org.

2018 Membership Survey. In February 2018, the author was appointed Policy Committee Chair by the HFUU state board of directors. Before that, he served as Vice President for the HFUU Waianae chapter since its start in August 2016 and until today. The task of the HFUU Policy Committee was to better understand the concerns and goals of the HFUU membership. The last membership survey was done in 2016 by then Policy Committee Chair Jessica Wooley and Policy Committee Secretary Faith Ewbank. The purpose of the 2018 membership survey was to renew the understanding of HFUU member's values, needs, challenges, and priorities. This was especially urgent as the HFUU membership had increased from 559 people in 2014 to 1,500 people in 2018, a 168% membership increase in four years.

The survey was designed in collaboration by a HFUU team of people including President Vincent Mina, Business Consultant David Fischer, Secretary and Operations Manager David Case, Communications Chair Keith Ranney, Membership Chair Melissa Jenks-Olivit, and Vice-President Anny Burch, and the author. The author also received assistance from Dr. Christy Mello at UHWO with the development of survey questions. The survey was conducted online using Qualtrics survey software. It was open for three month during the summer of 2018. Two notices were sent out to all HFUU member emails during this time. A total of 145 people (N 145), approximately 10% of HFUU membership in 2018, volunteered to respond to the survey. The response rate allows for some extrapolations about the 1,500 HFUU members and their impact in Hawaii local food industry yet with limitations discussed below. A survey

report was published on the HFUU website in October 2018 with some parts presented in this dissertation (Azizi, 2018). The organization's leadership suggest the survey helped to understand the membership needs and priorities and contributed to several policies at the HFUU State Convention in Maui, 2018. The membership report contains information about the value, challenges and priorities of farmers from all Hawaii counties. The survey helped inform both the general needs of farmers and some priorities for policy proceedings.

2019 NFU Policy Committee. The author was also a member of the 2019 National Farmers Union (NFU) Policy Committee and participated in one week of policy proceedings work during two occasions in 2019: 1) In January 2019 at the NFU headquarters in Washington D.C. and 2) In March, 2019 in Seattle, WA for the 117th annual convention of NFU. NFU's 2019 Policy Committee was in Washington, D.C. to begin the organization's policy-setting process. Over the course of the week, the committee met with congressional staff members and industry experts to discuss important agricultural issues. Additionally, they began editing NFU's Policy book to reflect current concerns and priorities. The members of the 2019 Policy Committee are Marcy Svenningsen of North Dakota, Wayne Herriman of Oklahoma, Todd Hagenbuch of Rocky Mountain (Colorado, Wyoming, and New Mexico), Steven Read of Minnesota, Oren Jakobson of Wisconsin, and the author representing Hawaii. For the 2019 Convention, more than 460 family farmers and ranchers convened to set organizational policy positions that seek to better the lives of American farm and ranch families and the vibrancy of rural communities. Delegates to the convention adopted the NFU Policy Book and eight Special Orders of Business that will guide the organization's government affairs priorities over the course of the next year, especially as they relate to the tough economic circumstances and sustainability issues facing family farmers (NFU, 2019).

The convention is NFU's most important event—it is the time every year where delegates set organizational directives and priorities to focus for federal-level policies (NFU, 2019). The data collected from this experience was in form of participant observation field notes. This experience allowed the author an enhanced understanding of the concept of grassroots farm policy and a format for policy deliberations structured by NFU and based on procedure following Roberts Rules of Order. It also contributed to the understanding of the difference and similarities between farm-led priorities in the U.S. mainland compared to Hawaii. Until this time, the author had not studied the U.S. agricultural industry beyond local food systems. Furthermore, the author was coming out of a long period of farm and rural immersion in Hawaii. The experience contributed to a broad understanding of the reality of federal farm policy, democratic bottom-up policy deliberations, and contributed to the author's

understanding of a participatory format for establishing: 1) common farmer needs (e.g., NFU Policy Statement), and 2) policy priorities or NFU's Special Orders of Business. This format then contributed to the conduct of bottom-up farm policy proceedings in Hawaii and with the HFUU Policy Committee.

HFUU Policy Committee. The author's experience with 2019 NFU Policy Committee trained him in the process of facilitating grassroots policy proceedings for HFUU in Hawaii. While the NFU Policy Statement is mainly to address farmers needs on a federal level, the HFUU Policy Committee's task is to address Hawaii State and County level policies for agriculture. As part of this work the author organized a policy sub group with several of Hawaii's food hubs including Adaptations, Kahumana Farm Hub, Hawaii Institute of Pacific Agriculture, Hawaii Ulu Cooperative, and Farmlink Hawaii. Policy proceedings from this group are published on the HFUU website including an Open Letter to the State in regards to procurement opportunities for food hubs, cooperatives, and farmers (see Appendices 4).

Organization of findings from data collection. Interviews, surveys, and participant observations from the three tiers of data collection presented above were organized into three categories of findings: findings 1- alternative farmers needs and their strategies for success in Hawaii; findings 2- Food hubs: community food supply; and findings 3- three alternative farmers policy priorities. Figure 1.6 shows how data collection contributed to each finding. Interviews and surveys contributed to a greater understanding of current alternative farmers' needs and strategies to succeed and understanding food hubs. Themes that came up repeatedly from findings 1 and 2 were formulated into priorities or urgent items that pose a significant change to increased local food production.

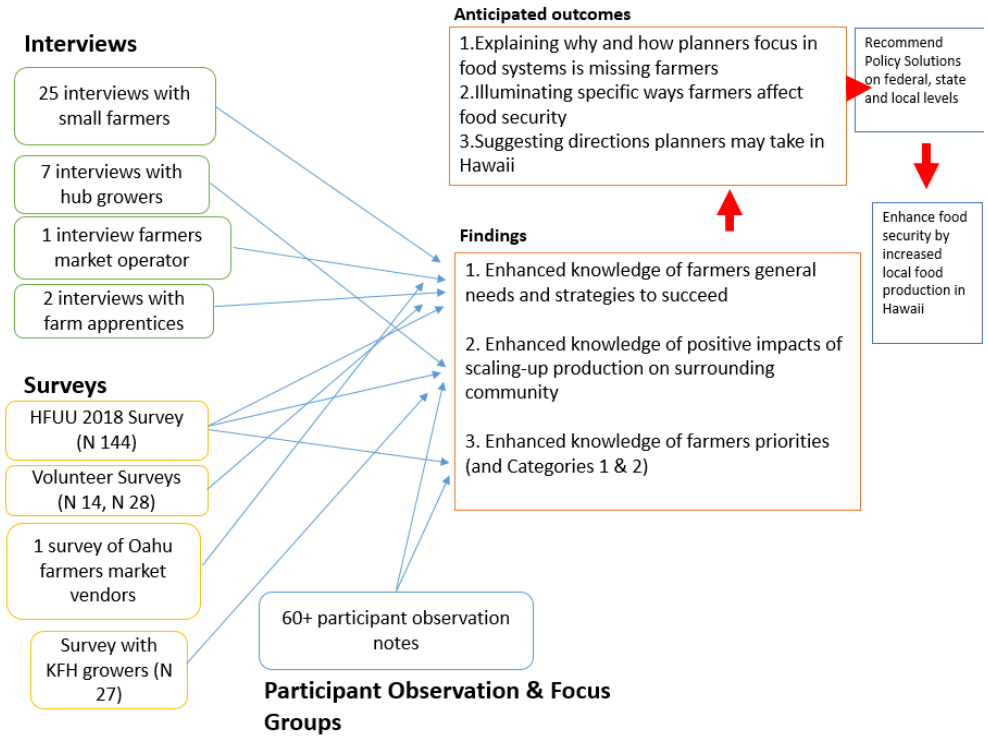

Figure 1.7- Organization of findings from data collection

Limitations of Study. While this dissertation explores the worldviews and activities of those directly involved in the research including the author and then works to resolve or address their challenges of increased food production, a critical limitation of this project is that it cannot present the values and challenges of those that were not involved. A common concern with the inductive approach is that the conclusion only represent a small group and cannot be extended to a larger population. On average, the farmers involved in this study generate more sales than the average small-scale farmer in Hawaii that produce food for local consumption. However, those are aggregate numbers and do not reflect that incomes varied greatly among farmers participating in this study. Maxwell (1992) suggest that qualitative research is not usually designed to allow systemic generalizations to some wider population. Two aspects of generalizations include: 1) internal-generalizing within the community, group or institution studied to persons, events, and settings that were not directly observed or interviewed, and 2) external- generalizing to other communities, groups and institutions (Maxwell, 1992). This dissertation analyzes the accounts of people involved in the study to offer wider conclusions for direct sales farmer population in Hawaii that was not involved in this study. While a range of farmers were involved with varied incomes, this dissertation focused on understanding the needs and priorities of the farmers that on average made a higher income to propose solutions for the majority of other farmers in Hawaii through increased food production and local sales.

Issues land preservation in Hawaii. A central concern when discussing food and agriculture in Hawaii, the high price and competing uses of land (Suryanata, 2002); however, this study views land from the point of view of existing farmers. For example, the study did not focus on understanding prospective farmers who might have given up their dream of farming because the land in Hawaii was so expensive; instead, it was informed by farmers that had found some solutions to coping with the high prices of land in Hawaii. In that respect, several farmers in the study expanded their operations and purchased more land during the study. Planners have a history of working with land preservation in food and agricultural systems even during times when they have been absent from local food planning discussion (Vitiello and Brinkley, 2014). However, the logic of land preservation often assumes that once land is preserved it can be put back in agriculture. Farmer and activist Richard Ha from Hawaii Island questions this point in a recent article in Honolulu Civil Beat. He suggest that "*everybody talks about preserving agricultural land, but nobody talks about preserving the farmer. There seems to be this belief that if the land is there, we'll farm it"* (Ha, 2019). Farmer

Ha's perspective is almost identical to the American Farmland Trust who suggest that farmers say that the best way to protect farmland is to keep farming profitable (American Farmland Trust, 2002). This dissertation adopts those views and attempts to understand the strategies that make existing DTC farmers profitable.

Structural injustices. The perspective that farmers will keep farming if it is profitable suggests that solutions for increased local food production rely on success in the marketplace and follow some capitalist logic. That idea has been unpopular among several cautionary scholars who suggest that increased food production does not address structural injustices in the local food system (Guthamn, 2004, 2008; Allen, 2010; Alkon and Norgaard, 2009; Winter, 2003; DuPuis and Goodman, 2005; Born and Purcell, 2006). The underlying reason these scholars suggest that structural injustices are not addressed in local food systems is because people who suffer from food insecurity cannot access or afford good quality food, but it does not necessarily incorporate the voice of food producers. This dissertation argues against the views that access and affordability of good food should be the central concern for justice work in the local food system and offers an alternative view based on farmers perspectives. Planning theory encourages acting on injustices while also addressing their structural causes and promoting citizen participation. Fainstein (2010) suggest that participation is highest in the locality but unable to affect larger power structures while participation in high-up decision-making process is low but the ability to change power structure is high.

The remedy for this kind of power and participation dilemma is suggested in the concept of nonreformist reform: a strategy that would operate in existing social frameworks but set in motion a series of transformative changes in which more radical changes become possible over time (Fainstein, 2010). Fainstein's (2010) idea of nonreformist reform highlights how structural change can start from within and over time change the structures and outcomes that we as a society deem need change. In this project, small-scale farmers in Hawaii are highlighted as pioneers leading a trend of alternative sustainable food production and consumption systems through the local food systems. This research attempts to build pragmatic connections to allow planners and farmers to collaborate better in the future and prevent planners from being blind to farmers' voices and perspectives in planning efforts. While this research does not necessarily attempt to address structural injustices of people who are food insecure, it builds the context and relationships for planners to better address issues faced by farmers including the structural concerns they might voice.

Development of farmers' needs and priorities. Because the author explored challenges of those involved in the day-to-day operations of farming, concerns of several other stakeholders might not get as much attention in this dissertation. The collection and processing of data to establish existing farmer challenges were two fold to form an understanding of: 1) farmers general needs, and 2) farm priorities for increasing local food production. To develop priorities from general needs, this study was informed by: 1) HFUU 2018 membership survey and subsequent policy actions, and 2) the HFGA focus group, and 3) the HFUU Policy Committee proceedings. The general needs category utilizes themes from interviews with farmers and workers. During the research process the author did not anticipate to develop priorities of small-scale farmers in Hawaii; the priorities formed over time and toward the later part of the dissertation writing. Part of the focus was to find common elements of concern that small-scale farmers and planners can take action to resolve. Because of the limited time and scope, not all farm concerns gained attention and the author made decisions to focus the challenges. Part of this process of categorizing and creating themes is explained in the chapter 3 methods. As mentioned above, however, the author's own journey through several personal involvement shaped the inductive bottom-up approach. In addition to prioritizing farmers challenges through the development of themes, the author developed some criteria for taking action to resolve challenges. Criteria include that a collective approach should benefits the interest of more than one farmer or situation, and that it should be participated by the farmers themselves and not just a planner or facilitator to represent farmers.

Perspectives of Operating Alternative Farmers. Before starting this research the author did not pursue a pre-conceived notion of what was needed to solve farmers problems. That was to be determined by the farmer involved in the study and what they chose to discuss. Many farmers discussed labor strategies including educating volunteers, interns and apprentices on farms. While some farmers and workers were interviewed about the general experience of managing or working on small-scale farms, this research does not necessarily represent the concerns of prospective farmers i.e., those who are considering going into farming and are currently in beginner farm training. It also does not generally represent the perspective of interns and apprentices in agriculture but merely their perspective as it is concerned with understanding a good match or good fit for educational programs on farms. There are many training and educational programs for beginning and new farmers aimed at growing more farmers; however, this dissertation approaches labor from the standpoint of existing farmers and discuss outcomes of educational programs on

farms as a strategy for existing farmers to increase local food production simultaneously as educating new farmers . While these programs help small-scale farmer with the availability and affordability of workers, they also contribute to agricultural workforce development. This is further discussed in Chapter 8.

Voluntary Response Samples. The HFUU 2018 membership survey was conducted on a voluntary basis by members who received an email invitation to take the survey. Voluntary sample responses are when the researcher appeals to people to voluntarily participate in a survey. Voluntary response samples always contain some biases: they include people who choose volunteer, whereas a random sample survey would need to include people whether or not they choose to volunteer. Good and Hardin (2006) report that while some bias in statistics is inevitable and can seldom all be eliminated, it is important for researchers to commit to reducing them over time. Often, voluntary response samples oversample people who have strong opinions and undersample people who do not care much about the topic of the survey. Extrapolations from voluntary response surveys are not as accurate as surveys when people were selected randomly.

Organization of Chapters and Appendices

This dissertation is organized into eight chapters. Following the introductory chapter, Chapter 2 *New Producers for new markets* provides a discussion of key concepts including food security, food localization and specific trends in Hawaii's local food industry. Moreover, the Chapter presents and analyzes theoretical and key concepts of food planning such as local food systems, food hubs, beginning farmers, grassroots farm policy and summarizes the economic, environmental and equity arguments in community food systems literature. The last part of Chapter 2 provides a summary of relevant public policy objectives and initiatives from Hawaii including policy language from the Hawaii constitution, Hawaii Revised Statues and the Planning Act but also several State initiatives for agricultural labor, rural development, self-sufficiency, food insecurity, and direct sales. Finally and before moving on Chapter 2 includes a summary of concept and ideas that have been presented up until that point.

Chapter 3 *Talk Story with Hawaii Farmers* shows the methods utilized in-depth and discusses data collected from interviews, surveys, focus groups, and participant observation that was undertaken. This Chapter describes how data was categorized from interviews and surveys. Chapter 4 presents the

authors personal journey and motivations for working in rural areas and with farmers. By utilizing journaling and participant observation, the Chapter explains the author's personal involvement during the last decade, relationship building, and research positionality. The Chapter is written in non-technical language, includes images and might appeal to people interested in understand the story behind community engaged scholarship in rural and farming communities.

Chapters 5, 6, and 7 present the findings from data collection from the three tiers of research organized into three chapters. Chapter 5 presents alternative farmers' needs and their strategies to succeed in Hawaii. Responses from multiple surveys, interviews, and field notes are organized into three different sections. In the first section, alternative farmers in Hawaii, presents some contextual findings from farmers background and history including size of farms, description of DTC activities, farmers educational background, farmers working with grants and non-profits and description of the farm's integration with tourism including attracting volunteers, interns and apprentices. Section two analyses findings from surveys and interviews in regards to farmers social values and motivations of farming. Farmers responses are assessed through ta value lens of alternative agriculture. It includes insights about organic, sustainable and regenerative agriculture along with other less explored values of farmers who also want to contribute to community building, educations of future generations and political change beyond the food sector. Alternative farmers' motivations and values is a key consideration to understand environmental impacts resulting from their practices and the growing emphasis on environmentally and socially friendly agriculture. Finally, section three alternative farmers and organizational lifecycle analysis draws from interviews with farmers that were visited multiple times over a period present findings on alternative farmers and capacity building including many beginning farmers efforts to scale-up production, specialize and invest in their operation. The organizational lifecycle model can reveal a more complete understanding and useful insights as to how alternative farmers operations change over time at various stages of development and the necessary policy solutions to scale-up local food production.

Chapter 6 presents the findings from the Kahumana Farm Hub research that was done in affiliation with UHWO Imi Naauao project. The first section of background and farm history includes farmers stories of Waianae as a sense of place. The next section described people's current farming activities and challenges. Many of the farmers in this section are low-income, MIFF's (part-time farmers) and even backyard growers. As a result, the description of activities and challenges of these farmers are different

from the Chapter 5 farmers. Moreover, Chapter 6 highlights dual roles of the food hub as a regional enterprise that can promote Indigenous subsistence agriculture and simultaneously exists in the formal, capitalist, market place through local food sales. Based on findings in Chapter 5 and 6 priorities for alternative farmers to increase local food production are discussed in Chapter 7. Priorities discussed include: 1) Attracting more workers to increase local food supply; 2) Building food hubs capacity to increase supply of local food; and 3) Preserve alternative farmers through local food systems policy incentives and considerations. Finally, Chapter 8 is the summary and conclusion of this research. The chapter situates findings from earlier chapters with policy implications local, state, and federal levels. It presents alternative farmers' policy considerations for direct-marketing, compares and contrasts agricultural policy in the U.S. mainland and Hawaii, and elaborates on the role of planners in supporting increased food production for small-scale farmers to strengthen community food security in Hawaii.

The Appendix. The appendix is keyed to each Chapter and Appendix references in the text can be located by page in the Table of Contents. Appendices 1 contains supplemental material for Chapter 1, Appendices 2 for Chapter 3, Appendices 3 for Chapter 5, Appendices 4 for Chapter 6, and Appendices 5 for Chapter 8.

Chapter 2

Food Planning As If Small-Scale Farmers Matter

We started out to save the family farmer and now it looks like the family farmer is going to save us.

Willie Nelson

Overview

Chapter 2 provides the literature review of this dissertation. It includes the ideas that frame the research topic and methods. The first part provides a review of the economic, environmental, and equity arguments in local food systems literature. That is followed by a discussion on planning theory and food planning. This chapter also reviews food planning policy case studies by the Growing Food Connections- a community food systems planning partnership of planning scholars, experts and stakeholders from across the U.S. After the review of planning literature, this chapter further discusses concepts of food security, local food systems, food hubs, and public policy language and initiatives for food security in Hawaii. Finally, this chapter provides a summary of key concepts that have been introduced so far in food planning and its application to Hawaii.

Local Food Systems and Food Planning Research

Economic Arguments for Local Food Industry. One economic argument for food localization has been to create an alternative to large income distribution inequalities in the conventional food industry. For example, one of the central negative consequences of dispersed or global food systems is the concentration of power and ownership in multinational agri-food corporations and supermarket chains that dominate food supply chains (Hendrickson et. al., 2001). In addition there is a large disparity in the benefits received from each dollar spent on food between retailers and farmers. For one dollar spent on food in the supermarkets, growers receive only 15.8 cents: food marketers-processors and food distribution business- receive the remaining share (Canning, 2011). There are two main problems with the concentration of power in the industrial food system to which food localization has posed an alternative. First, food producers are poorly rewarded in comparison to other food businesses because they receive a small share of retail food dollar. Second, the money spent on food locally often gets dispersed globally and does not stay in the local community; for example supermarket chains are often not owned locally (Campbell, 2004). One of the big triumphs of the local food economy is that it has been able to reconcile some farmer's income through alternative marketing of direct to consumer sales such as

farmers markets and community supported agriculture (Kloppenburg et. al., 1996). These local markets successfully decentralize income distribution by taking out the middle tiers of the food supply chain and give producers a gateway to sell their food directly to local consumers (Hinrichs, 2000). Regarding the second point of spending money on local food, studies show that increased spending through direct to consumer avenues of farmers markets and CSA's , in turn, increases spending on other local business through what has been called the "multiplier-effect" creating more local jobs and a more vibrant local economy (Day-Farnsworth and Morales, 2011; Farmers Market Coalition, 2016). The multiplier effect is commonly referred to in practitioners' food planning reports (e.g. Grimm, 2011; Shabazian, 2011). Further research has been done to develop economic models that can measure the trickle-down effect of local food moneys also because it helps justify county and state level bureaucrats' efforts in food localization (Shabazian, 2011). In summary, the logic of food localization is to decentralize income distribution in the food industry by: 1) direct-to-consumer sales: supporting local farmers' opportunity for receiving a larger share of each dollar spent on food, and 2) creating a stronger local economy through deliberate purchases on local foods by public institutions such as schools, hospitals, prisons, and others.

Critics to these developments have pointed out that the higher food prices associated with local food through direct marketing hurts consumers' particularly low-income segments of the city (Day-Farnsworth and Morales, 2011). The absence of mid-tier and supply chain entities in the food system drives local food prices higher affecting the most vulnerable people in the food-system are low-income consumers. Day-Farnsworth and Morales (2011) argues that planners need to move beyond the local scale and scale-up production to build more regional distribution partnerships; one way to do that would be aggregation through food hubs. Day-Farnsworth and Morales (2011, 231-232) claims that "*direct marketing is an impractical means of moving high volumes of local product into venues such as retail grocery stores and cafeterias because farm-direct sales typically move small quantities of product, while retail and institutional buyers would prefer to buy larger volumes from fewer suppliers."* Aggregation- the consolidation of products sourced from multiple growers- is good because through scaling-up it makes regionally sourced foods affordable for consumers and can better address the demand of larger institutions (Day Farnswort et. al. 2009). Direct marketing benefits farm business profits and producer-consumer relationships, but it has failed to produce food that is as affordable as conventional foods. There is a tension between access and affordability of food for low-income consumers, on the one hand, and small-scale farmers' business survival on the other hand which has resulted in two different goals competing for public resources (Guthman et. al., 2006).

Environmental Arguments for Local Food Industry. The environmental sustainability argument in food localization has been mainly concerned with minimizing the environmental footprint of communities (Kloppenburg et. al., 1996; 2000). Modern industrial agriculture following the Green revolution logic, through increased application of advanced science and technology, has caused changes in farming practices leading to bigger and more mechanized methods. Those methods rely on intense fossil fuel use and synthetic chemicals (McNeill, 2000). The use of fossil fuel has caused major concerns for farming's contribution to anthropogenic global warming and synthetic chemicals has gotten into soils and waters causing major health consequences (Brown, 2008). Moreover, fossil fuel use associated with food transportation is a major concern; for example, the average food item travels at least 1500 miles and calculations shows that growing, processing and delivering the food consumed by a family of four requires about the same amount of fossil fuels that the family's cars consume annually (Starrs, 2005). As an alternative, small-scale farming with tighter producer-consumer linkages is likely to emit less fossil fuel in transporting the food and less chemical and fossil-fuel pollution in producing the food (Kloppenburg et. al., 2000). USDA supports this notion and has stated that small-scale farms produce significant environmental benefits through responsible management of the natural resources (USDA, 1998). The 1990 USDA definition of sustainable agriculture holds that the term sustainable agriculture means an integrated system of plant and animal production practices having a site-specific application that will, over the long term: 1) satisfy human food and fiber needs; 2) enhance environmental quality and the natural resource base upon which the agricultural economy depends; 3) make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; and 4) sustain the economic viability of farm operations; and enhance the quality of life for farmers and society as a whole (USDA, 2019).

Pollan (2007) and others such as McKibben (2007) have repeatedly stressed to the U.S public that families can become more environmentally responsible in their food purchases by acquiring food from local organic producers in local farmers markets. Indeed, food purchased within the proximity of where it is produced through more direct linkages between producers and consumers, has used far less fossil fuels in the production and transportation process (Brown, 2008). Yet it is more difficult to measure aggregate environmental impacts of food systems as whole systems rather than their individual parts (Meter, 2011). Developing the tools to measure systemic ecological impacts of localization (foodshed) has therefore been an urgent project of food planners in order to produce the useful information

necessary to justify localization (Pothukuchi, 2004; Freedgood et. al., 2011;). While it is often assumed that localization has reduced the local footprint, there is a lack of empirical data to prove that (Freedgood et. al., 2011). Nonetheless, studies show that farmers participating in local sales are typically small-scale producing of organically grown foods (Lass et al., 2003).

Critiques of the food localization movement's ability to lower a community's environmental footprint, beyond the problem of measurability mentioned earlier, focus on the latest trends in organic food production. As recognized by Guthman's (2004b) the conditions set by the processes of agro-industrialization undermine the ability of even the most committed producers to practice a truly alternative form of organic farming. This is mainly because large transnational corporations such as Kellogs, Mars, Heinz, Dole etc. have entered the organic food market and thus changed its procedural structure to better serve their own needs (Guthman, 2004b). To Guthman, this has virtually eliminated small-scale farmers that practice a deeper organics; Californian agribusiness growers tend to practice a shallower form of agroecology influenced by the imperative of agricultural intensification resulting from long-term processes of agro-industrialization. This poses the largest threat to an ecological farming strategy (Guthman, 2008). Kloppenberg et. al. (2000) finds that ecologically sustainable farms are self-sustaining organisms where production increases soil and water quality and ecological sustainability is characterized by a philosophical relationship with the land that is non-exploitative and regenerative.

Equity Arguments for Local Food Industry. The equitable argument for food localization is concerned with addressing underserved/ materially deprived populations such as low-income, women, African American and Latino populations (APA, 2007). Meeting people's most fundamental basic needs and giving access to resources to meet those needs are central concerns of food equity (Allen, 2010). In food localization this has led to addressing the 'food desert' problem- places that lack access to the *right* kind of food; these include connections between nutritionally healthy and economically affordable foods (Raja et. al., 2008). Low income and minority areas contain fewer supermarkets on average; these areas also trend to have a higher density of convenience stores offering fewer healthful choices, higher prices, and fast food outlets (Morland et al. 2002). This then becomes a major public health concern as it causes diet-related disease such as diabetes and obesity (NCHS, 2002). Food deserts are a phenomenon of capitalist rationales in that the underserved lack the income and purchasing power to attract markets and have therefore been left without access (Guthman, 2011; Campbell, 2004). To change this problem, public health practitioners and urban planners have worked on improving what

they call “the built food environment” or spatial disparities which highlights characteristics including food physical access, availability, affordability, and quality of food (Campbell, 2004; Potukuchi, 2005). Research has also shown that improving the built food environment leads to better public health through reduction in diet-related disease (Raja et. al. 2008; 2010). This has been done mainly by planning interventions including: 1) engaging with supermarket chains to attract them to serve communities in need, 2) engaging with existing convenience stores to carry more of the good foods, and 3) linking federal supplemental nutrition programs (SNAP) with local farmers markets (Minkaer et. al, 2011). While there are individual case-studies that show success in each of these areas of intervention e.g. Pennsylvania Fresh Food Financing Initiative- a financial initiative that gives incentive to grocery stores to move into low-income and underserved neighborhoods, Pothukuchi (2005) argues that more can be done— despite acknowledgements of the problem, planning agencies have played a minimal and passive role in reducing it. This diminishes prospects for addressing materially deprived populations from a perspective of improving access and the built environment. Critics have also pointed out that access in itself might not be a comprehensive view of equitable justice in food localization for reasons that will be explained later (Allen, 2010; Guthman, 2013). Equity can be a response to meet people’s needs particularly focusing on underserved populations (Allen, 2009). Yet internationally, food movements have been more interested in land redistribution and access to land as an equitable argument; land reform is virtually non-existent in the debate in the U.S. (Allen and Wilson, 2008; Borras, 2008).

Focusing only on access as a localization equity strategy has come under strong criticism because it defines people mainly as consumers and neglects procedural equity (Campbell, 2004). On this point, Allen (2010) and Young (1990) have argued that participation in designing the systems of distribution that allow underserved population to meet their fundamental needs is a critical juncture of food procedural equity; this would mean that underserved groups are deliberately included in designing the food projects that will affect them, which to Raja (2014), has not yet taken place. Raja (2014) has highlighted that materially deprived groups- e.g. a single mother with three part-time jobs- face such immediate hardship that it would be unfair to suggest their participation in a Food Policy Forum. Guthman (2013) has articulated another strong critique of localization by the built environment argument; her studies on obesity argue that there is a methodological error in the assumed connection between the food environment and eating behavior. Guthman (2013) suggests that owing in part to the inability of quantitative research to answer questions of causality, many studies offer untested

assumptions. These do not measure obesity in place and space, rather they rely on availability of spatial and statistical data (Guthman, 2013). Gutham (2013) criticized Raja's (2010) conclusion of spatial connections between women's BMI (body mass index) and restaurants in the area through spatial analysis, because it assumes the built environments mediates unhealthy and healthy diets. In short, Guthman's argument is that qualitative research can build better causality through narratives involving capitalist elite domination.

Discussion on the food localization debate and planning theory. Attempts to decentralize economic control held by multinationals supermarket chains through localization projects such as direct marketing and increased local spending is likely not enough (Campbell, 2004). Direct sales, at its best, give only a few numbers of existing farmers an improved survival strategy. Local spending and the trickle-down rationale works by economic statistical assumptions that more spending is better but do not address whether the extra money is going to the *right* people or just a different and more local elite (Campbell, 2004; Born and Purcell, 2006). The counter proposal of focusing on low-income consumers though regional systems shows how food prices can be lowered through aggregation but fails to deliberately address the concern of economic distribution for small-scale farmers (Allen, 2010). On environmental sustainability, despite assumptions that food localization is more environmentally friendly in terms of food production and transport, tools and methods are lacking to show connections between reduced use of fossil fuels and a systematic local food approach (Freedgood et. al., 2011). Organic production standards in California have failed to produce an ecologically sound food production method because of larger political and economic pressures of the agro-industrial complex that drive farmers to intensify and scale-up production (Guthman, 2008). Pothukuchi (2005) argues that public agencies have not been very concerned with the materially deprived and food access; deeper forms of equity such as participation in decision making and intervention design is not likely to be carried out by agencies. Indeed, as Pothukuchi (2005) and Levkoe et. al. (2011) point out non-profits might be better institutions to facilitate change between private sector and the materially deprived in the local food system. Finally, Guthman (2011; 2013) presents a strong critique of appropriate methods to explain the *right* situation and not just what is *likely* to explain unhealthy eating behavior.

Beyond the criticisms of food localization explained through economic, environmental and equitable components, a number of scholars have framed their caution around the entire bundle of suggestions that come with food localization and claimed that these have been subject to strong neoliberal

rationalities aka free market logics (Guthman, 2008; Born and Purcell, 2006). For example, The Slow Food Campaign and Buy Local Campaign in the U.S. were initially positioned as more radical anti-globalization social movements to challenge the global agrarian structure and the workings of capitalism, but have increasingly become mainstream consumer movements promoting increased local spending on food (Allen, 2010). Marcuse (2009) suggests that radicalism, as opposed to many other frames of scholarship, builds connections between problems and developments and sees them as interrelated; in practice it views current explanations of events as explanations of those in power, the elites who dominate society. Several important works have warned of elitist and narrow forms of localization at the expense of wider societal interests such as inclusion (Campbell, 2004; Born and Purcell, 2006; Allen, 2010). On this point, Guthman (2008) suggests that agro-food politics as well as the scholarship have contributed to neoliberal subject formation, as demonstrated by four recurring themes in contemporary food activism as they intersect with neoliberal rationalities: consumer choice, localism, entrepreneurialism, and self-improvement.

This suggests that the very framing of food localization has been done in ways to steer people away from real fundamental change that can challenges the grit of the capitalist society (Allen, 2010). Instead, by inserting market rationalities into food solutions, such as relying on consumer preference and the right spending for social and environmental improvements, current localization does not challenge the fundamental social reality of oppressors and oppressed (Guthman, 2004a). This point is emphasized in Allen (2010, 295) who argues that *"to the extent that people are trying to solve problems of tastelessness, processed foods and the numbing sameness of the food-procurement experience, local food systems can provide solutions. For other food-system issues, particularly those involving social justice, the role of food system localization is less clear."* In short, Allen's statement shows two directions in localization; firstly, a more superficial juncture in food localization which relies on local people's food preferences to drive change; and, secondly, a more radical/critical juncture which requires a more emancipatory localization movement to address elite structures of dominance that prevents the liberation of the underserved (Allen, 2010).

Publications from people such as Allen, Guthman, Campbell, Pothukuchi, Kloppenburg, Hinrichs, Born and Purcell were all very influential to this research during the design and implementation of this project. However, after a number of years of working with small-scale farmers, entrepreneurs, and non-profits in the local food system, the voices of scholars became more distant partly because the

underlying situation in Hawaii is different compared to the mentioned studies. Planners attest to the importance of paying attention to changing situations, that questions of value are an inescapable part of planning and supports planners to deliberately develop situated judgment (Campbell, 2006). As mentioned earlier, Brooks (2002) argues that we experience an increasing gap in planning-practice theory because of the range and scope of issues that the modern planners deal with. For example, while one planner considers a combination of action, historical events, capitalist democracy, qualities of space, and unresolved societal issues in his professional approach, the other would be happy in working with one small-scale aspect of improving a community.

In Hawaii, the possibility of doing good work that benefits disenfranchised people was presented to the author through different avenues and times. The best way to explain the author's personal perspective is that it takes a compassionate or non-profit business such as a well-established food hub to impact several social goals at the same time including to create better prices of local food, compensate farmers in the community, and to begin to address structural injustices in the food system. It is not correct to write-off the whole bundle of entities and efforts that operate within capitalist market logic as not being able to contribute to a better society through local food projects. It might be easier to argue the opposite i.e., there is little opportunity to contribute to good change if one does not get involved in the marketplace.

A food hub such as Kahumana Farm Hub (KFH) can operate within market logic, buy and sell local food and make a profit while also contributing to increased income opportunities for farmers locally, donating fresh foods to food bank projects, replacing the need for imported foods in the stores, and advocate to recuperate opportunities for people in areas that have historically produced food. It can achieve several goals at the same time including poverty alleviation, increased local food production, supporting existing and retired farmers, perpetuating Indigenous Hawaiian culture, sustainable agriculture, and creating new jobs. The food hub's primary function is to provide an income for its members. The hub can also set high quality standards and train it's members in them, sometimes though the experienced members teach the food hub about that. People who grow food often do not like to deal with excessive bureaucracy so a hub can perform those tasks including IRS compliance, organic and safety licensing, and meeting customers' needs for ongoing orders. A food hub can represent community self-sufficiency because the community produces solutions to its own food challenges. A hub also represents a form of community empowerment, because it allows underserved

populations, the growers, to meet the need of their own community and others. It can be culturally empowering if it is culturally oriented activism is supported. In addition, a food hub such as the one described here can be fully owned and developed by a small-scale farm as an extension to meeting their customers' needs. Thus, it can bring benefits to small-scale farmers.

Planning practitioners and scholars encourage taking action on injustices while also addressing their structural causes and promoting citizen participation. For example, Fainstein (2010) suggest that participation is highest in the locality but unable to affect larger power structures while participation in high-up decision making process is low but the ability to change power structure is high. The remedy for this kind of power and participation dilemma, Fainstein (2010) says, is suggested in the concept of nonreformist reform: a strategy that would operate in existing social frameworks but set in motion a series of transformative change in which more radical changes become possible over time. Thus this strategy would use a similar notion of affirmative action, correcting the mistakes in place, while building a more just social structure that can address social structures that give rise to injustice in the first place. Fainstein's (2010) ideas highlights how structural change can start from within and over time change the structures and outcomes that we as a society deem need change. In this project, small-scale farmers in Hawaii are highlighted as a pioneering trend and an alternative and a preferred sustainable option for food production and consumption systems when compared to industrial, conventional agriculture and dispersed food systems.

The ladder of participation (Arnstein, 1969), suggests that there are significant stages of citizen participation; knowing these various stages makes it possible to cut through the hyperbole to understand the increasingly strident demands for participation from the have-nots as well as the range of confusing responses from power holders (Arnstein, 1969). Arnstein (1969) suggest that when they are extended by power holders as the total extent of participation, citizens may indeed hear and be heard but under these conditions they lack the power to insure that their views will be heeded by the powerful. When participation is restricted to these levels, there is no follow-through, no "muscle," hence no assurance of changing the status quo. Friedmann's (1995) article on teaching planning theory has also been an influence to the chosen research methodology in this project. Friedmann (1995) highlights several important aspects of planning theory and there is an emphasis on the process rather than outcome. In the absence of process related consideration, the practitioner will adopt the "outcomes" of a certain action for its result and either neglect process altogether or give it limited consideration. According to Freidmann (1995), process can focus on applied rationality in decision-

making, social support through advocacy and bottom-up approaches in the public realm, communicative action within each micro-context, linking knowledge, action, and social learning as an experiment, and radical practices that oppose the status quo.

Freidmann (1995) writes that planning theory has been stuck in a rational decision-making paradigm for two decades; however, more recently planning theory has to do with linking knowledge to action (Friedmann, 1995). Unlike most theories in the social/human sciences, Friedmann (1995) suggest that planning theory is neither explanatory nor predictive. It is a theory of good practice with the main objective of improving planning practice. Planning practice is also not self-revelatory and who the planners are is not given in their official titles according to Friedmann (1995). Freidmann (1995) divides planning theory into five categories. Some of these categories that had an effect on the research approach, design, and methods in this project. For example, Friedman (1995) talks about the idea an active society which has in planning theory come to be known as advocacy planning (Davidoff, 1965), community participation (Peattie, 2001), planning from below (Stöhr, 1981), and equity planning (Krumholz and Forester, 1990). Further, Freidmann (1995) suggests planning-in-practice seldom meets expectations, which speaks to why planning is a "muddling-through" process rather than an exercise in applied rationality. Forester (1999, 2006) among others talks about communicative action on a micro-interaction scale such as in public planning offices. Finally, linking of knowledge to action or social learning in Friedmann (1995) moves away from rational planning and focuses on ongoing actions and interactive social processes. While planners are champions of advocacy planning and paying attention to pluralism, equity, and bottom-up planning, this has been slow to develop in food systems planning among farmers. In fact, the National Farmers Union have developed a method for grassroots farm policy to influence changed on local, state, and national levels (NFU, 2019).

Food planners have a history of working with issues of food production and consumption in communities and also a period of having been absent in regards to these issues (Vitiello and Brinkley, 2013). Dating back to Howard in 1898, planners prioritized food issues for the necessity of people's survival (Pothukuchi and Kaufman, 1999). Yet for about one hundred years planning has ignored the food system, or pursued "food-blind" planning (Raja, 2014), except for the issues concerning preservation of agricultural lands (Pothukuchi and Kaufman, 2000; Vitiello and Brinkley, 2013). Concerns for food planning returned in the early 21st century through influential writing of Pothukuchi and Kaufman (1999, 2000) who argued that planners are well equipped for systematic analysis of municipal

food because the subject has been compartmentalization. Thibert's (2012) studies showed that food planners were coming in into the discussion late: while planners through their municipalities can play an active role (intervene) in food localization, it is important to recognize that the urban agriculture movements started in spite and not because of planning intervention. To support this bottom-up movement, Raja (2014) has suggested that planners are not in the leading seat, they are in the listening seat and ought to facilitate community driven change rather than try to dominate or drive it.

The facilitative role of planners has come to be supported by the communicative turn in planning e.g. Forester (1989, 1998) who adopts a mixture of Habermas's ideas on pragmatic decision-making skills and Foucault's assertion of ominous politics and power in planning (see Flyvbjerg, 1998) to land at a new method for social engagement: to reach consensus or a single direction forward through the engagement of multiple diverse interests in a politically savvy manner. A so called win-win where all participating stakeholders would gain. Forester (2006) argues this is achieved at the micro level of planning - at the local, municipal scale. This recipe for social change through localization is denied by more radical planners who argue that changes are not all win-win changes: what helps some, is likely to hurt others; all changes are win-lose; and thus, scales such as the local and the global are no different (Marcuse, 2008; Harvey 2008). Examples of collaboration for building common ground with diverse stakeholder involvement where planners play a key role include local food policy councils, public school food policy, zoning and vacant lands for localization, and regional food systems, and the built food environment (Campbell, 2004). Health practitioners have come together with planners to address public health issues beyond individuals health choices (which is often the concern of nutritionist) such as the built food environment through increased access to food stores in materially deprived areas (Campbell, 2004; Raja; 2014). The complementary work of public health and planning can be clearly seen from a 2010 convention among four professional associations American Dietetic Association, the American Nurses Association, the American Planning Association (APA), and the American Public Health Association, which created a common report for collaborative practice.

Another coalition mentioned in Pothukuchi (2005) show cases where planners' partnerships with non-profits can play a vital role mediating between the materially deprived and the local food distribution industry through managing spatial information in matching stores with people's demand. Yet these planning interventions at the local level seem to take place within market logics where win-win situations can happen. Even as planners try to influence stores to move to underserved areas, a process described

in Pothukuchi (2005), market analyses and expected spending (SNAP spending is now included in the analysis) often determines the outcome thus within market logics. Some scholars argue that food localization needs to move outside of market logics to impact real social change; this is echoed in Levkoe et. al. (2011) who argues that its justice programs for the materially deprived were successful because it was heavily subsidized through its savings.

Implementation of Food Planning on the Municipal Level: Examples from Cities in the U.S.

Planning efforts on local and municipal levels to strengthen local food systems are no longer new initiatives. Twenty years after planners Pothukuchi and Kaufman (2000) suggested that planners should advocate for community food systems, local governments across North America have developed, enacted, and, indeed, implemented policies aimed at strengthening community food systems.

Local and regional government (LRG) involvement including governments such as city, town, and county governments, as well as special-purpose governments such as school districts, have responded to address problems in the food system. Raja et al. (2018) categorize LRG policies including: 1) soft policies, 2) official plans, 3) ordinances, bylaws, and regulations that are legally enforceable, 4) actions that provide physical infrastructure, and 5) fiscal enactments that influence community food systems. While the first two offer broad guidance, the remaining three facilitate implementation (Raja et al., 2018). Soft policies are resolutions and declarations, which are not enforceable by the power of law. Official or formal plans prepared or adopted by LRGs provide guidance about the future of a community with implications for its food system and include community food system plans and comprehensive plans (Raja et al., 2018). Plans also set the stage for developing implementation tactics and tools in a community while ordinances, or local laws, enacted by LRG entities regulate community food systems practices such as zoning codes (Raja et al., 2018). Fiscal enactments result in public expenditures or the generation of public revenues tied to the food system (e.g., a tax law).

Many local and regional governments use a combination or variants of these policy tools. Food planning implementation topics often include: 1) access to healthy food by underserved people, 2) linking farmers with underserved people, 3) farm to school programs, 4) removing barriers to food production through municipal codes and zoning, and 5) assisting start-up projects to access grants (Thibert, 2012). In most planning efforts, working with food insecurity groups and disenfranchised people seems to take

a front seat and increasing local food production and increasing the pool of small-scale farmers receives little effort until more recently (Dillemuth et. al., 2017).

While this dissertation aims to address the absence of alternative farmers in community food systems' planning, some planners are expanding their skills and responsibilities and starting to address farmers and food production. That can be seen from the work of a group of researchers including well-known food planning scholars called Growing Food Connections (GFC). The GFC (https://growingfoodconnections.org) is a federally funded national initiative focused on local government capacity in food systems planning. From 2012 to 2017, the GFC a national advisory committee with representation from diverse disciplines and regions, engaged in a policy action research initiative to enhance food security among consumers while ensuring sustainable and economically competitive agriculture among struggling farmers in vulnerable communities across the U.S. (Raja, Whittaker, Hall, Hodgson, & Leccese, 2018). GFC is a project that includes research, education, and policy engagement activities to strengthen community food systems. They have published a series of brief reports from nine cities and counties across the U.S. that have had some results in LRG food planning efforts that focus on increased local food production.

Chittenden County, Vermont- In Chittenden County, a rural area in Vermont, the Chittenden County Regional Planning Commission (CCRPC) has maintained a balance of working with farmers to understand challenges to increase local food production and also focused efforts on reconciling hunger for people who experience economic poverty. Their efforts have also focused to allow urban agriculture as a use in local zoning regulations (Hodgson et. al., 2015).

City of Cleveland, Ohio- A brief report from the City of Cleveland, shows efforts to strengthen urban agriculture and healthy food available in the city. Among the challenges they acknowledge is that urban farmers struggle with pricing food affordably, yet high enough to cover their livelihoods, and persuading residents to make healthy choices by purchasing locally farmed goods and also Cleveland residents – 35.4% of whom are living in poverty – rely on corner stores, which tend to lack the capacity to stock healthy or culturally appropriate food (Fodor and Hodgson, 2015a).

City of Minneapolis, Minnesota- The City of Minneapolis has developed a number of policies, programs and projects to support food production and improve food security through focus on urban agriculture or access to healthy foods. The city initiated a local foods initiative called Homegrown Minneapolis (HGM) an umbrella program for several projects including an urban agriculture policy plan

with amendments for zoning regulations, farmers market regulations and "farmers bucks" incentive program, a task force, a food council, and a fund, and a coordinator position (Hodgson and Fodor, 2015).

City of Seattle, Washington- The City of Seattle was early to advocate for an urban agriculture policy of food access, sale and availability of locally grown food, urban food production, and recycled waste stream compared to other cities (Ericsson et. al., 2009). In 2009 a report identified several policy initiatives to support urban agriculture by defining municipal codes, zoning ordinances, developer incentives, support for sale of locally grown agricultural produce, and improved access to information, aligned codes, process of converting vacant urban lands to food production including leases and sales of land, and collaboration among government agencies and private companies (Ericsson et. al., 2009). Seattle's goal is that all people have access to healthy, affordable, sustainably produced food but among those efforts is to increase market and distribution opportunities for local farmers in King County (Whitton and Hodgson, 2015).

City of Philadelphia in Pennsylvania- In 2011, Mark Bittman with the New York Times wrote about the progressive City of Philadelphia (Bittman, 2011). Food planner Domenic Vitiello suggested that simple yet effective municipal food policy and planning measures could help make Philadelphia North America's leading city for local food, contributing significantly to its leadership and progress in sustainability more broadly (Vitiello, 2010). Among the recommendations was that food access and production should be made a priority for additional economic development activities including 1) new financing and loan programs, 2) addressing challenges of energy cost for supermarkets and grocery stores, 3) enabling access to publicly held lands, 4) promoting water access and composting activities, and 5) adopting a City charter to stress the importance of local food and agriculture, 6) creating a food-policy council, 7) purchasing a certain percentage of its food locally, 8) stabilize emergency food relief programs, 8) make school engines for food-security, and 10) promote awareness, understanding, and participation in food production and culinary arts (Vitiello, 2010). Most of the projects in Philadelphia are concerned with the goal of making healthy food available to low-income city residents; food producers and urban agriculture receive some attention as a hope to create economic activity in the 40,000 empty parcels around the city (Hodgson and Fodor, 2016).

Lancaster County, Pennsylvania- Efforts in Lancaster County include several programs to promote local food production and new farmers. Projects include the Common Ground Agricultural Program that was established by the Lawrence municipal government in 2012, this program leases vacant city-owned property to gardeners and farmers. They created a food systems coordinator position to work on access of healthy foods for residents and also conducted a food hub feasibility study in 2013 to understand

whether a food hub would enable scaling-up of local food sales to institutional buyers (Fodor and Hodgson, 2015b).

Authors (Raja et al., 2018) suggest that early experiences point to the need for strong community engagement, public investments, and coordination and communications as essential elements of local government engagement. Based on their experience with GFC, the authors raise several important issues for local and regional governments to strengthen community food systems:

1. **Governance**: collective public decision-making and problem-solving benefit from greater engagement from nongovernmental actors, as broad-based engagement in governance processes can be more effective at achieving public objectives than governments acting alone (Raja et al., 2018)
2. **Schools**: School districts, for example, play a crucial role in changing the ways in which children in the U.S. eat (Raja et al., 2018).
3. **Monitoring and evaluation**: The lack of a comprehensive organizing framework and the focus on implementation instead of outcomes prevent the use of metrics in assessing progress toward broader food policy goals (Raja et al., 2018). The question of *who* gets to decide if measured in the first place, signals that inclusion in decision-making is as important to equity as the equity of outcomes (Raja et al., 2018).
4. **Process:** Raja et al., (2018) argue that policymaking is not linear (see figure 2.1 Planning and Policy Process):
    a. Because of the framing of inclusivity and the nonlinearity of the process, people can engage in, or exit and re-enter, the process at any of the points as answers are being developed for the questions (Figure 2.1: the orange circles).
    b. Evaluation and refinement may result in coming back to the process itself, or attending to foundations of relational trust and engagement with the community.
5. **Measurement and evaluation**: Local governments across North America have developed, enacted, and, implemented policies aimed at strengthening community food systems (Raja et al., 2018). For true progress, the next decade has to be one of measuring progress (or failure), uncovering successes, and abandoning failed, if well-intentioned, local government policies
6. **Equity**: A key consideration for local government policies is *who* drives, and *who* benefits from strengthening community food systems. Some authors suggest pushing further so that the most

affected determine the food system agenda. Thus, local governments must open the process to give those most affected by policies the time and tools to build the table in the first place (Raja et al., 2018)

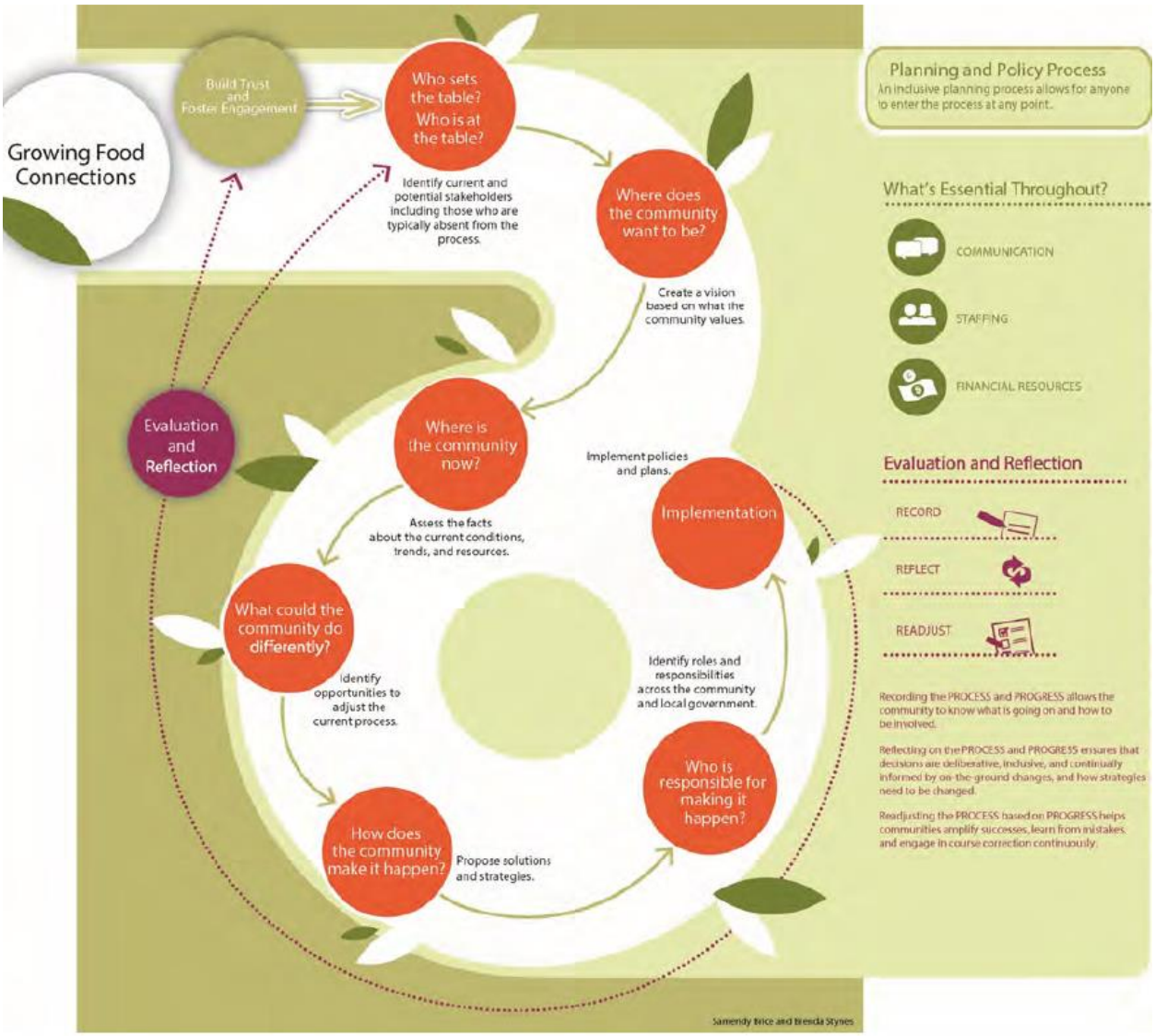

Figure 2.1 Planning and Policy Process from Raja et al., (2018)

Authors (Raja et al., 2018) suggest that advocates must engage in reflexive practice, reflecting and readjusting both on processes used, and on resulting policies, in addition to their own role in governance while continually attending to inclusive and equitable engagement. It is not uncommon that advocates take on dual roles of scholars and practitioners in community food systems research (Raja et. al., 2018). While duality of roles has significant benefits where scholars bring disciplinary rigor as well as

a commitment to equity and justice, there remains a danger of researchers being *too* close to the work (Raja et al., 2018).

Planning tools for local food systems. LRG assessments for strengthening food systems are have been developed over the last twenty years. Meter (2011) have focused his work on planning assessments and argues that if the purpose of a food system is to build health, wealth, connection, and capacity in our communities, then the process of assessing food systems should also contribute to those aims (Meter, 2011). Moreover, each food system assessment should be explicit about its approach to systemic analysis. Meter (2011) is a food systems practitioner as well as a visionary so he offers and good take of theory and practice but there is no specific mention of food production in his discussion on assessments. Planning practices are being developed to address the complex soil-to-soil food system, which spans production to consumption to reuse and recycling of waste (Freedgood et al., 2011). Freedgood et al., (2011) suggests that community engagement is critical to fostering interactions within the full spectrum of food system stakeholders — from farmers and ranchers to planners and local officials to individual and institutional consumers. In a 2011 article, Freedgood et al., (2011) highlighted several food planning assessments including:

1. **Local or Regional Foodshed Assessment**- Determine the existing or potential geographic boundaries of local food procurement; identify the land requirements for feeding a given population.
2. **Comprehensive Food System Assessment**- Analyzes the systemic nature of a local, state, or regional food system, including the land requirements, production, processing, distribution, consumption, and disposal of waste. Addresses the interactions of food with social, environmental, and economic concerns.
3. **Community Food Security Assessment**- Engages community members in assessing food system access and framing action initiatives. Improve low income food access and participation; promote food security. Identify key system dynamics affecting low-income residents.
4. **Community Food Asset Mapping**- Engages residents in informal mapping exercise to take asset based approach to food system visioning.
5. **Food Desert Assessment**- Identifies locations in a given region where residents have limited access to supermarkets or other healthy food sources. Identify resident concerns about food access.

6. **Land Inventory Food Assessment**- Identifies underutilized land suitable for agriculture and assess the extent to which a municipality or region can feed itself.
7. **Local Food Economy Assessment**- Assesses prevailing economic conditions in local farm and food systems. Make the case for community-based food commerce, jobs and wealth creation; unify local stakeholders around economic analysis of food system; help engage local officials in food planning.
8. **Food Industry Assessment**- identifies key food industries in a region, perhaps assist investors in making investment decisions, or identify existing or potential industry clusters in food.

Local Food Systems and other Key Concepts

Local food markets typically involve small-scale farmers and short supply chains in which farmers also perform marketing functions, including storage, packaging, transportation, distribution, and advertising (Martinez et al., 2010). According to the definition adopted by the U.S. Congress in the 2008 Food, Conservation, and Energy Act (2008 Farm Act), the total distance that a product can be transported and still be considered a "locally or regionally produced agricultural food product*" is less than 400 miles from its origin, or within the State in which it is produced*. Terms such as "local food," "local food system," and "(re)localization" are often used interchangeably to refer to food produced near its point of consumption in relation to the modern or mainstream food system (Peters. et. al., 2009).

The USDA 2015 Marketing Survey, a nationwide survey, shows that the *"majority (53 percent) of farms marketing food directly were located in metropolitan counties, and two thirds (67 percent) of direct food sales were from farms located in metropolitan counties….more than 80 percent of farms selling food directly sold all of their directly marketed food within a 100-mile radius of the farm; fresh food products account for 53 percent of direct-to-consumer sales* (USDA, 2016). The description above further explains the connection between direct sale farmers and metropolitan areas that brings them to the periphery of urban planners. Direct sales in the U.S. mainland have three large customer groups 1) directly to consumers, 2) retailers, and 3) institutions and food hubs (USDA, 2016).

Farms sell directly to:

Consumers *(35 percent of direct sales in 2015)*
Includes sales through farmers markets, onsite farm stores, roadside stands, CSA (Community Supported Agriculture) arrangements, online sales, pick-your-own operations, mobile markets, and other means.

Retailers *(27 percent of direct sales in 2015)*
Includes supermarkets, supercenters, restaurants, caterers, independent grocery stores, and food cooperatives.

Institutions and Intermediary Businesses *(39 percent of direct sales in 2015)*
Includes institutions such as schools, colleges, universities, and hospitals as well as intermediary businesses such as wholesalers, distributors, processors, etc., that market locally or regionally branded products.

Figure 2.2- Farms sell directly (USDA, 2016)

Food Hubs. A food hub is a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional farmers to strengthen their ability to satisfy wholesale, retail, and institutional demands (Barham et. al, 2010). Food hubs are typically a part of a local food marketing system. Local food markets involve small-scale farmers and short supply chains in which farmers also perform marketing functions, including storage, packaging, transportation, distribution, and advertising (Martinez et. al, 2010). Small farmers and growers who produce local foods face challenges in scaling-up, due to the significant costs of marketing their products and processing those products to prepare them for market (Day-Farnsworth and Morales, 2016); in addition, the incentive for farmers to expand and increase efficiency is reduced as more time is spent on off-farm business activities, such as marketing and networking (Martinez et. al., 2010). Food hubs have been described as an essential component of scaling up local food systems and a flagship model of socially conscious business (Colasanti et al., 2018). Food hubs have also been described as "*financially viable businesses that demonstrate a significant commitment to place through aggregation and marketing of regional food*" (Fischer, Pirog, & Hamm, 2015a, p. 97). A 2017 National Food Hub study shows that 42% of hubs characterized themselves as nonprofit, another 37% percent of hubs classified themselves as for-profit, which included (most frequently) LLCs as well as S, C, and B Corps and other self-described for-profit structures; in addition, consumer, producer, and hybrid cooperatives accounted for 18% of hubs, and the remaining 3% were publicly owned or cited another legal structure (Colasanti et al.,2018).

Alaska	37%	Vermont	30%
Rhode Island	33%	Washington	30%
Hawaii	33%	New Hampshire	30%
Maine	33%	California	29%
Florida	31%	Texas	29%

Figure 2.3 Beginning Farmers percentage of total farmers (USDA NASS, 2012)

Beginning Farmers. Beginning farmers, defined as less than 10 years in operation, are found across the country with some areas having higher concentrations. Hawaii is among the top ten states in percent of principal operators who are beginning farmers (USDA NASS, 2012). As beginning farms are smaller on average than established farms, they account for only 10 percent of production on family

farms. Beginning farmers often report that their biggest challenge in getting started in farming is access to enough capital and farmland to operate at a size capable of earning a sufficient profit. Not surprisingly, the households of beginning farm operators have a lower farm and nonfarm net worth than the households of established farms (USDA, 2013). While most beginning farms include some operator-owned land, they are more likely than established farms to have only rented land. For beginning farmers in general in the U.S., the most common way to have acquired "owned land" for their operation is to have purchased it from a nonrelative. But established farms of all size classes are more likely than beginning farms to have inherited or acquired their owned land from relatives (USDA, 2013).

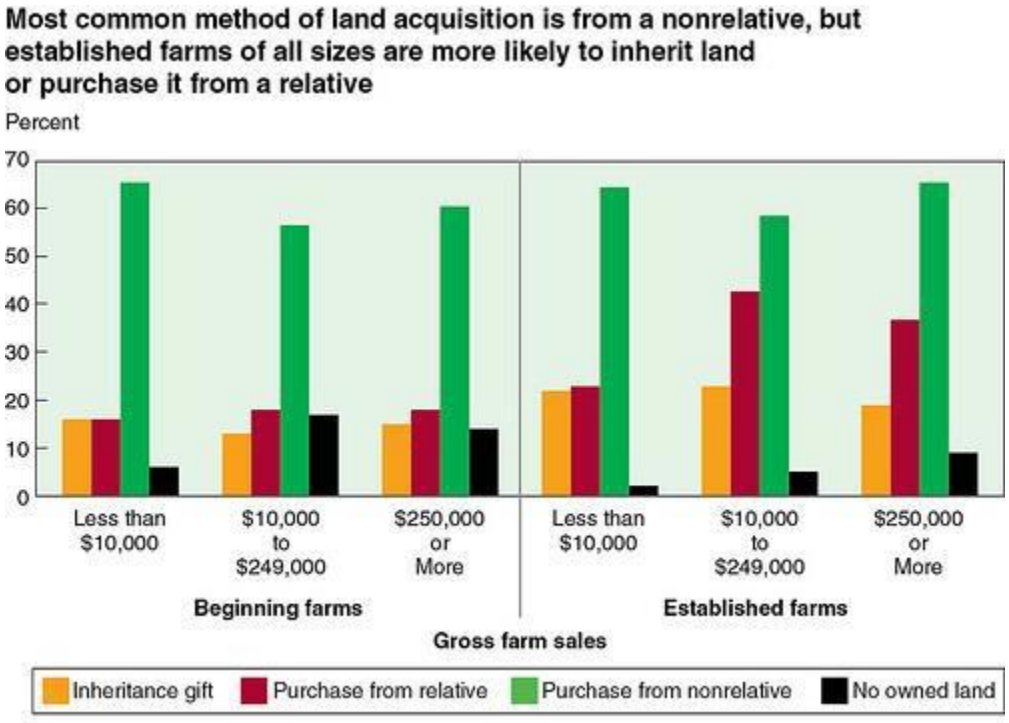

Figure 2.4 Land acquisition for beginning farms (USDA, 2013)

A survey performed in 2001 (Lass et al., 2003) of beginner farmers in Community Supported Agriculture (CSA) shows their connection to local markets and motivations for sustainable agriculture including the following findings:

1. CSA farmers are youthful and highly educated and the farms are typically small producing organically grown foods
2. Twenty-three percent of the farms did not own the land they operated making other land-use agreements very important. These different arrangements could include rental agreements, long-term leases, and ownership by a CSA organization (other than the farmer) or a land trust.
3. Most land-use contracts, over 68 percent, were made with private landowners. The next most

popular category, other, accounted for about 17 percent of the arrangements and included a number of non-profit organizations (universities, churches, conservation organizations, etc.),

4. The CSA operation was just one of several enterprises - farmers markets, direct marketing to restaurants and retail stores, roadside stands, and on-farm sales were popular
5. CSA farms use a diverse combination of labor including principle farmers and hired workers as well as family, interns, apprentices, and shareholder labor.
6. Nearly 68 percent of the farms that responded used between one and four workers, about half were paid a wage.

Agricultural interns, apprentices, volunteers. Agricultural interns, apprentices, volunteers contribute to increased local food production while receiving hands-on training and work experience on small-scale farms (Ekers. et. al., 2016; Azizi and Mostafanezhad, 2016). Over the last decade there has been a large increase of non-paid seasonal internships, apprenticeships and short-term volunteer positions on small- and medium-size locally oriented farms across Canada, the United States and Western Europe (Ekers. et. al., 2016). In a typical non-waged farm internship, individuals provide their labor with little or no monetary compensation, but are often given some combination of training, accommodation, meals and a small stipend in return. Although unpaid family labor has historically been a central feature of many farming operations, there is a growing trend of non-family members working seasonally outside of a formal wage relation (Ekers. et. al., 2016). Many locally oriented farm operators are managing to persist in a challenging economic climate through their use of intern, apprentice and volunteer labor. Growth of non-paid work on farms is not simply being driven by economic processes but also a series of noneconomic relationships focused on non-institutional farmer training, the pursuit of sustainability and social movement building.

A great number of food producers in Hawaii also rely on interns, apprentices, and volunteers to grow and sell food for local consumption in Hawaii (Azizi and Mostafanezhad, 2014; Mostafanezhad et. al., 2015). The practice and values of farm hosts play a vital role in the facilitating of what are perceived by both hosts and volunteers as an authentic farm learning experience (Azizi and Mostafanezhad, 2014). “A good match” between host and volunteer exists when farm hosts have the ability to select the right person based on sharing information such as expectations and responsibilities before the arrival of a new intern, apprentice or volunteer. With the help of the farm volunteer movement farmers are able to continue their operations but not necessarily making large profits. Many volunteers eventually leave the

farm while most farm farmers aspire to become a successful business with a stable workforce that is competitive in the marketplace. The temporary nature of this relationship is a critical limitation of farm volunteering (Mostafanezhad et. al., 2015); however, many interns and apprentices who started their journey as a volunteer and later became farmers and farm workers.

Grassroots farm policy. To give an example of how local food systems have enhanced opportunities for farmers we can look at the National Farmers Union (NFU) - one of two large organizations that advocate on behalf of farmers. NFU has adopted an internal policy to promote local food systems for family farmers. The union supports all initiatives aimed at regionalizing food systems. That support includes encouraging the development of regional food hubs, incentivizing those farms who commit to growing non-commodity food crops and easing/simplifying the restrictions on small meatpackers to process meat for retail sale, and the farmers who sell direct-to-consumer and institutions that purchase their products for resale and educating consumers. NFU also supports the expansion of agricultural operations in urban and peri-urban areas (NFU, 2018). NFU (2018) recognized that the local food movement has several benefits (see table 2.1).

Benefits of Local Food Movements
Enhanced markets for the products that many members' farms produce;
The ability for farmers to capture a larger share of the retail food dollar;
Opportunities to employ and engage more Americans, in more regions, in the pursuit of agriculture;
Keeping consumer dollars circulating in each respective region, and to the family farms therein;
Reconnecting consumers to the food they eat and their families;
Reducing transportation costs;
Providing fresher, healthier food products, with a reduced need for transportation, long-term storage, processing or treatment;
Food security: encouraging food production to be spread across the country; and
Allowing for more sustainable methods of agriculture to be employed

Table 2.1 Benefits of Local Food Movements (NFU 2018)

From table 2.1 the term "food security" is refers to *"encouraging food production to be spread across the country."* This is a significantly different conceptualization of food security than the discussion in Chapter 1 where Alkon and Noorgard (2009, pp 289) suggest that food justice "*places the need for food security—access to healthy, affordable, culturally appropriate food—in the contexts of institutional racism, racial formation, and racialized geographies.*"

Figure 2.5. The Farmer's Share of the Retail Dollar- This is an image from NFU's website (2018) that highlights the farmer's share of the retail food dollar. NFU also recognizes that local food systems enable farmers to capture a larger share of the retail food dollar.

Chapter 1 discussed planners as big supporters of public interest and the importance of community participation in all aspects of planning (APA, 2007). NFU represents over 200,000 family farmers, fishers and ranchers across the country, with formally organized divisions in 33 states. The key to the success and credibility of the organization has been the Union's grassroots structure in which policy positions are initiated locally. The policy process includes the presentation of resolutions by individuals, followed by possible adoption of the resolutions at the local, state and national levels. NFU members advocate these policy positions nationwide (NFU, 2018). NFU constitutes a powerful potential ally for food planners and a partnership could help planners better understand how to resolve concerns such as food security, climate change, public nutrition and hunger with the grassroots participation of farmers. This idea will be discussed more in Chapter 5.

The Changing Logic of Food and Agriculture

A central task of this dissertation is to understand the emergence of the local food system, how it has changed the lived experience for: 1. farmers in Hawaii, how farmers affect the community and, 2. how their activities can be supported and incentivized through farmer-led policy, programs, and projects. Local food systems or direct-to-consumer sales by farmers emerged partly as an alternative to conventional agriculture. In conventional agriculture, farmers received a mere fraction of the money spent by the final consumers (for example see figure 2.5). Community Supported Agriculture (CSA) and farmers markets are examples of direct agricultural markets, based on face-to-face links between producers and consumers; these markets, according to (Hinirchs, 2000, pp 295), "*present an apparent*

counterpoint to large scale, more industrialized systems of food production and distribution, now under the growing control of a few seemingly unpeopled, yet powerful transnational corporations. If relations between producers and consumers are distant and anonymous in more "global food system", in local, direct markets, they are immediate, personal and enacted in shared space."

A food dollar represents a dollar expenditure on domestically produced food by U.S. consumers; the current status quo shows that food producers receive 15.8 cents for each dollar spent on food (Wilde, 2013; Canning, 2011). For current food producers, and many more prospective producers, the emergence of the local food economy has brought some hope of receiving a larger share of the U.S. food dollar through vertical integration into activities of food marketing such as processing, packaging, value-added developments, advertising, distribution, and sales. In turn, because the activities that make a direct-to-consumer farmer successful are significantly different from conventional agricultural activity, and they makeup up to 50% of the population base of Hawaii's farmers and increasing (USDA, 2016a), a better understanding of and deeper insight into direct-to-consumer farm operations can support policy solutions to food security on multiple levels (federal, state, local) to be better fitted for farmers, rural communities, and the many other stakeholders in the local food economy in order to increase local food production.

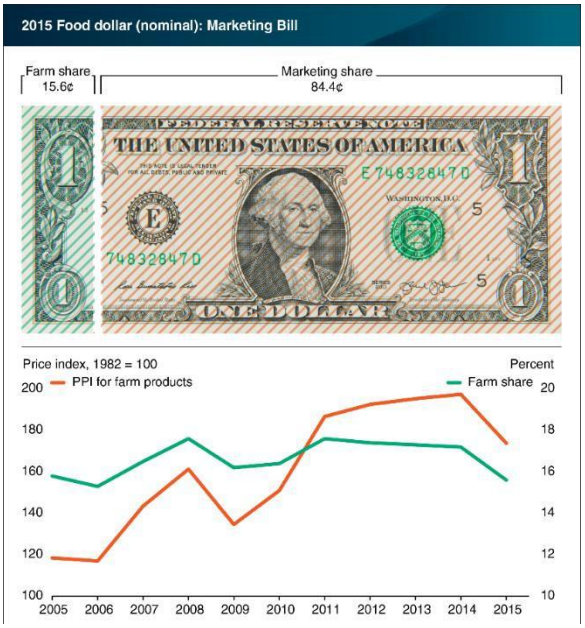

Figure 2.6 2015 Food Dollar (USDA, 2015)

As mentioned above, the USDA report (Canning, 2011) shows that a conventional food producer receives a small portion of the US food dollar. The largest portion is the marketing share. Researchers such as Hendrickson et al. (2001) have shown corporate concentration in the food industry over the last fifty years and argued that the food supply chain- retailers, grocery stores, and super markets- are increasingly being consolidated by large corporations pursuing market controls through their own vertical integration. By the way, this vertical integration is very different from the direct to consumer operations that vertically integrate for making value-added products. For NFU, market domination of non-family farmers has been one of the strongest unifying forces among family farmers to ensure fair practices and opportunities for family farmers (e.g. see NFU Policy, 2008). Consolidation took place

during a time of agricultural decline in the U.S. including an aging and declining farmer population and operations abroad providing cheaper food with cheaper labor (McKibben, 2008).

Figure 2.7- Hartman Group (2008) consumer preference study show consumer rational for eating local associated with authentic eating as opposed to fake eating.

For several reasons, however, as conventional agriculture was declining, local food began increasing. Bill McKibben (2008) explains the social changes in eating and consumer behavior that are allowing for a new population base of farmers, CSAs, and farmers markets to be established and build a new economy around local food. Other authors including Pollan (2007) presented a similar view of the global food industry and the emergence of the local as a potential solution to a myriad of problems associated with globalization (Brown,2008; Kloppenburg et al., 1996 and 2000). McKibben (2008) and others introduced the idea of a new public awareness around food production based on climate change, the negative environmental impacts of the industrial food system but also consumers re-defining food quality around ideas of local, organic, fresh, and natural (Hartman Group, 2008).

One of the main reasons for local food to become so popular was because of the presumed health and safety benefits and the improved environmental outcomes associated with organic food (Guthman,2002). Local farmers' markets in the U.S. added to the feeling of community for urban residents (Hartman Group,2008); however, while it added a new form of food marketing in communities, Hartman Group (2008) argue eating local was often dissociated with change by consumers and viewed as an antidote to change by supporting the "little guy" in local farmers' markets. Consumers stated developing a notion of authentic eating associated with knowledge about the food and the farmer who grew it, while eating fast food and traditional processed food was described as fake eating (Hartman Group,2008). Local foods was argued to have a less impact on the environment, which people were increasingly worried was vulnerable to climate change (Brown,2008). There was also an important economic argument for local foods mentioned above: spending money in your local community will not

only benefit the people that you spend it on but it will trickle down and multiply and affect surrounding businesses (Grimm,2011;Shabazian, 2011). For these reasons and others, direct-to-consumer sales was becoming an avenue for farmers. While the total farming population is still decreasing in other areas, there is now an increase in young farmers and beginning farmers who are "new farmers" in local food systems (USDA, 2012). New farmers refers to farmers who are not related to any farmers before them i.e., family farming or plantation farming. Understanding this population and connecting them with supportive planners for Hawaii has been the aim of this dissertation project. Farming values, approach, and skills required in this type of agriculture is significantly different for other than non-local farmers. Moreover, the programs that address conventional farmers might not help incentivize the new emerging local food industry. Therefore, this research should represent the lives and operations of farmers who produce food for local consumption in Hawaii. Based on the insights of the people who participated in this study, considerations and recommendations for policy solutions pose a potential to be effective in terms of assisting existing farmers in Hawaii to improve and expand their operations.

Critiques of Movements and Questions of Food Justice

Guthman (2008, 1174) suggests that "*projects in opposition to neoliberalizations of the food and agricultural sectors appear to have uncritically taken up ideas of localism, consumer choice, and value capture ideas which seem standard to neoliberalism.*" Rural sociologists have agreed on this point arguing that changes in food sustainability, no matter what scale, are perceived as redundant insofar as they do not contribute to significant social changes and justice (Tovey, 2002; Allen and Wilson, 2008). While Barnett et al., (2005) argue that consumption is a key site of ethical self-formation and can be an entry point for thinking about political and ethical responsibility, others suggest that localism expressed though consumerism can only reproduce the problems it is set out to abandon (Holt-Gimenez and Altieri, 2013).

Critical thought into social movement abandons the view of them as "*rational actors pursuing political goals through strategic mobilization of resources*" and adopts a more radical view of "*social movements as possible bearers (and products) of new societal orders*" (Tovey, 2002, 3). The civic agriculture movement was seen as having potential to incorporate the social aspect of local food movements not only through links between food production-consumption but also new human-nature interactions based on civic commitments between people and place (Berry, 1996; Lyson, 2004; Carlson, 2004). Another social food movement discussed here is permaculture. It stands for permanent agriculture and

it is the conscious design and maintenance of economical, agriculturally productive ecosystems that have the diversity, stability, and resilience of natural ecosystems (Mollison, 1990). While focusing on agriculture, it also establishes the importance of integration between landscape and people (Mollison, 1990). Mollison (1990) argues that permaculture is needed in everybody's life and that the productive skills of each citizen can contribute to a more democratic, environmentally sustainable, and harmonious lifestyle in the place that one lives. Mollison (1990) suggests that every person should have an opportunity to further their personal contributing to their community's food self-reliance through appropriate learning.

This transformation will have to start in each household: people are yearning to reconnect with nature, a sense of community, a simple lifestyle, and a harmonious integration of local landscapes, food and agriculture (Mollison, 1990). In addition, new approaches and technologies involving application of blended modern agroecological science and Indigenous Knowledge systems spearheaded by thousands of farmers, NGOs, and some government and academic institutions have been shown to enhance food security while conserving natural resources, biodiversity, and soil and water throughout hundreds of rural communities in several regions (Altieri, 2009). Schanbacer (2010) argues that food sovereignty approaches food as a human right and it contributes to a local-, family-, and community-based ethic that stresses the values of sustainability, interdependence, environmental protection and local production for local consumption.

Moreover with the threat of climate change scholars have emphasized an expanded view of agriculture. IAASTD (2008) report suggests that... *"Agriculture is multifunctional. It provides food, feed, fibre, fuel and other goods. It also has a major influence on other essential ecosystem services such as water supply and carbon sequestration or release. Agriculture plays an important social role, providing employment and a way of life. Both agriculture and its products are a medium of cultural transmission and cultural practices worldwide. Agriculturally based communities provide a foundation for local economies and are an important means for countries to secure their territories"* (IAASTD Global Report. 2008).

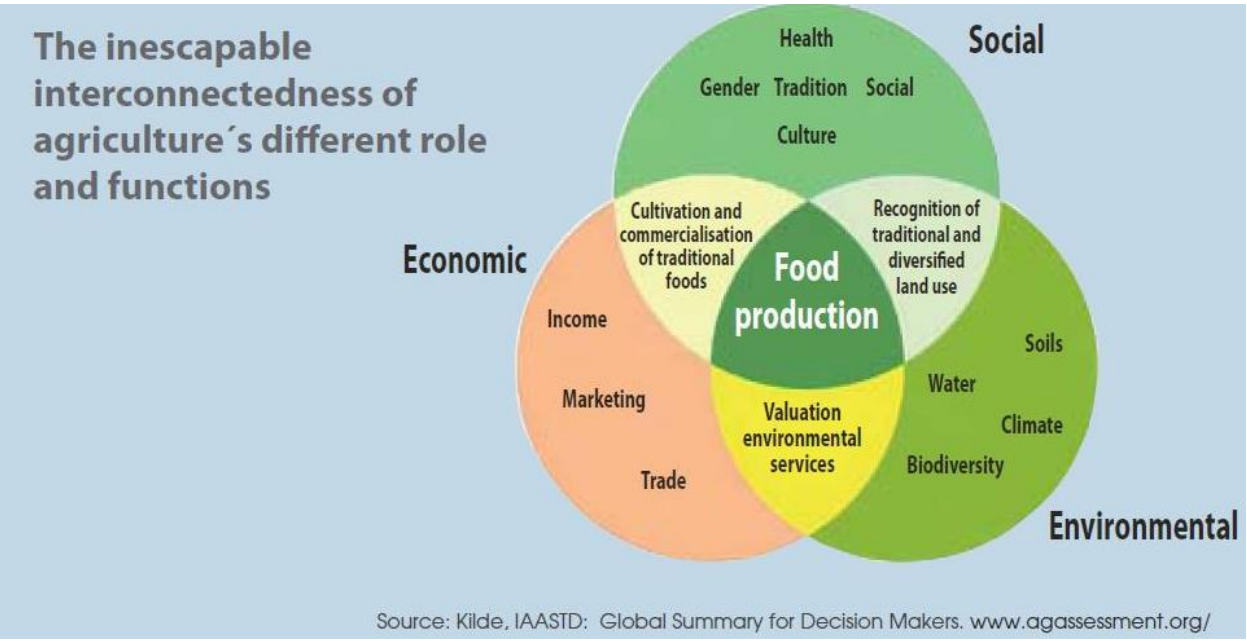

Figure 2.8- The inescapable interconnectedness of agriculture's different role and functions

Many social movements have developed faster in South and Central American and other developing countries than in the U.S.. Escobar (2001) is a strong advocate for human right and localism in South America and he argues that social movements in agriculture have a twofold commitment: 1) to the preservation of ecological diversity and integrity, and 2) to the renewal of local economies and communities (Escobar, 2001). Escobar (2001) develops a human rights component to localization and social movements theory as the re-creation of space through localization, place-making, resistance to colonialism and neocolonialism in international relations. Other scholars argue that Central America's rich and violent political history has meant that activists once involved in movements for social change are still around, many of them are in NGOs working for sustainable agriculture (Holtz-Gimenez, 2001). Holtz- Gimenez (2001) illustrates the importance of farmers 'bottom-up movements for developing sustainable agriculture. He argues that perhaps the most pressing lesson is simply that agriculture in general will change not only when farmers change, but when farmers and their allies are capable of changing the institutions that prevent change (Holtz-Gimenez, 2001). To that end, he argues, formation of international and regional alliances for influencing agricultural research and development may provide a useful way to overcome the present policy impasse in sustainable agriculture (Holtz-Gimenez, 2001).

Federal Policy Support: Local Agriculture and Marketing Program (LAMP)

Local and regional food systems have grown in popularity over the past decade as evident by the increasing supply of and demand for local foods. Some evidence of this growth includes nearly tripling the number of farmers' markets, and the initiation of thousands of farm-to-school programs across the U.S.. Local foods have often topped consumer and food professional surveys of food trends (Martinez et al., 2010). Many existing government programs and policies support local food initiatives, and the number of such programs is growing. Federal policies have grown over time to include the Community Food Project Grants Program, the WIC (Special Supplemental Nutrition Program for Women, Infants, and Children) Farmers' Market Nutrition Program, Senior Farmers' Market Nutrition Program, Federal State Marketing Improvement Program, National Farmers' Market Promotion Program, Specialty Crop Block Grant Program, and the Community Facilities Program (Martinez et al., 2010). Programs that support farmers' local food initiatives include the Local Food Promotion Program (LFPP), Farmers Market Promotion Program (FMPP), Value-Added Producer Grant (VAPG), Beginner Farmer and Rancher Development Program (BFRDP), Community Food Projects Competitive Grant Program (CFCGP), Farm to School Grants (FSG), Food Insecurity Nutrition Incentives (FINI).

The 2018 Farm Bill created the Local Agriculture Market Program (LAMP) and provides the program with $50 million annually in permanent, mandatory funding. LAMP puts popular programs – including the FMLFPP and VAPG – under one umbrella (Shier, 2019). FMLFPP funds both direct-to-consumer marketing strategies (such as farmers markets), as well as the work of intermediaries that help connect producers and consumers (such as food hubs); VAPG, on the other hand, supports farmers or groups of farmers in the development of value-added producer-owned businesses (Shier, 2019). LAMP maintains these programs while adding a few new key provisions. The program offers grants to support public-private partnerships to plan and develop local and regional food systems (Shier, 2019).

Hawaii Programs and Public Policy

Short history of agricultural policy. Research suggests that the modern-day ancestors of today's Indigenous Hawaiian community resided in the Hawaiian Islands at least as far back as 500 and 700 A.D. They brought with them taro, sugar cane, bananas, nuts, pigs, chickens, sweet potatoes, and other food items that they managed through small-scale farms throughout the islands (State of Hawaii, 2012). During this time and prior to the arrival of Captain Cook in 1778, Indigenous Hawaiian people had been one hundred percent agriculturally self-sufficient over a millennium, supporting a population of 800,000

to 1,000,000 of Indigenous Hawaiians (Stannard, 1989), compared to today's population of 1.4 million of people residing in Hawaii. It was commonplace, if not expected, that people from all walks of life would engage in agricultural labor, and Hawaii's Indigenous Peoples political system maintained processes that ensured adequate agricultural labor to serve the Hawaiian people.

Export-oriented agriculture first became popular in the 1850s with Irish and sweet potatoes, onions, pumpkins, oranges, molasses, and coffee, much of which was shipped to the U.S. West Coast. This was around the same time as landholding system was changed to allow fee simple ownership of land by private persons (Hollyer, 2013). Fifty-seven percent of all lands (approximately 2.3 million acres) was privatized with the majority being owned by plantations (Philip, 1953). The sugar and pineapple industries eventually became the largest export crops , which required a significant number of farm laborers (Philip, 1953). Prior to 1878 most farm workers came from China, but in that year workers arrived from Portugal, and after 1885 mostly Japanese workers began to reach Hawaii. In 1900, Filipino farm workers arrived, followed by smaller groups of immigrants from Korea, Puerto Rico, Spain, and Germany (Philip, 1953).

While different from the agricultural labor system established by Indigenous Hawaiians prior to Western contract, the Hawaiian Kingdom and subsequent U.S.-based governments also prioritized policy actions that secured the farm labor that residents and industry desired. The term "diversified agriculture" was first introduced when sugar and pineapple industries experienced decline in the 1950s. To quote Philip (1953, preface) *"the term diversified agriculture as used in Hawaii includes all agricultural industries on the Islands other than sugar and pineapple."* In 1951 Hawaii had a well-balanced trade freight with approximately 2 million tons coming in and 2 million tons going out (Philip, 1953). Only two decades later, imports were on the rise and locally grown and locally consumed food was in a decline from the 1960s. The 1970s witnessed the continual decline in plantation production levels and, most importantly, planted acreage for pineapple and sugar declined, while food imports outpaced locally grown food to meet the growing tourist demand (State of Hawaii, 2012). Since the decline of plantation era agriculture, public policy objectives have transitioned from promoting "any other industry than sugar and pineapple" to promoting "local food grown for local consumption", also known as increased agricultural self-sufficiency- as can be seen in the 2012 Hawaii Food Security and Self-Sufficiency Strategy (State of Hawaii, 2012).

Hawaii constitution. “Ua Mau ke Ea o ka ‘Āina i ka Pono” is a well-known Hawaiian phrase attributed to King Kamehameha III to define the obligation to perpetuate the life of the land in 1959. It means, “The life of the land is perpetuated in righteousness” (Hawaii State Legislature, 2016). Section 3 of the State constitution, Article XI of the Hawaii Constitution entitled “Conservation, Control and Development of Resources” provides that the State shall conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency and assure the availability of agriculturally suitable lands. Lands identified by the State as important agricultural lands needed to fulfill the purposes mentioned above and shall not be reclassified by the State or rezoned by its political subdivisions without meeting the standards and criteria established by the legislature and approved by a two-thirds vote of the body responsible for the reclassification or rezoning action. Moreover, section 10 of the same Article states that “*farm and home ownership holds that public lands shall be used for the development of farm and home ownership on as widespread a basis as possible, in accordance with procedures and limitations prescribed by law*” (Hawaii State Constitution, Article XI).

Hawaii Revised Statues. Title 11 Agriculture and Animals, Chapter 141-1 (8 and 9) provides that the Department of Agriculture shall, among other things, act to conserve and protect agricultural lands, assist in research and development of local agricultural industries, promote diversified agriculture and agricultural self-sufficiency, and set priorities for the leasing of public lands within the department’s jurisdiction (HRS 141-1). Chapter 155 provides for the Agricultural Loan Program. The program is managed by the Department of Agriculture to encourage the use of loans for the development of new farmers and new crops. "New farmer" refers to a new farm enterprise or a person, who by reason of ability, experience, and training, is likely to successfully operate a farm and includes any of the following: 1) Persons displaced from employment in an agricultural production enterprise; 2) College graduates in agriculture; 3) Community college graduates in agriculture; 4) Members of the Hawaii Young Farmer Association and National FFA Organization graduates with farming projects; 5) Persons who have not less than two years' experience as part-time farmers; 6) Graduates from farm trainee programs designed to provide interns with the necessary hands-on skills and management training to successfully operate their own farm; 7) Persons who have been farm tenants or farm laborers; or 8) Other individuals who have for the two years last preceding their application obtained the major portion of their income from farming operations. The loan program supports a wide range of agricultural activities from purchase of land, equipment, buildings, farm sustainability projects, disaster and emergency loans, and support for cooperatives (HRS 155-1 “New Farmer” definition).

Chapter 163 D: The Agribusiness Development Corporation was established and with the purpose to fill the gap in agricultural activity after plantation era agriculture. Within the next decade, seventy-five thousand acres of agricultural lands and fifty million gallons per day of irrigation water are expected to be released by plantations. The downsizing of the sugar and pineapple industries will idle a valuable inventory of supporting infrastructure including irrigation systems, roads, drainage systems, processing facilities, workshops, and warehouses. The challenge to government and business is to conserve and convert the arable lands and their associated production infrastructure in a timely manner into new productive uses that are based upon strategies developed from detailed marketing analysis and monitoring of local, national, and international opportunities.

Among others things the ADC should: 10) Assist agricultural enterprises by conducting detailed marketing analysis and developing marketing and promotional strategies to strengthen the position of those enterprises and to better exploit local, national, and international markets; 11) Carry out specialized programs designed to develop new markets for Hawaii agricultural products; 12) Receive, examine, and determine the acceptability of applications of qualified persons for allowances or grants for the development of new crops and agricultural products, the expansion of established agricultural enterprises, and the altering of existing agricultural enterprises; 13) Coordinate its activities with any federal or state farm credit programs; 15) Provide advisory, consultative, training, and educational services, technical assistance, and advice to any person, partnership, or corporation, either public or private, in order to carry out the purposes of this chapter, and engage the services of consultants on a contractual basis for rendering professional and technical assistance and advice; and b) The corporation shall develop, promote, assist, and market export crops and other crops for local markets. These responsibilities are similar responsibilities to those of the Department of Agriculture (HRS, 163 D-1).

It is also ADC's mandate to prepare the Hawaii agribusiness plan which shall define and establish goals, objectives, policies, and priority guidelines for, among other things: 3) An analysis of imported agricultural products and the potential for increasing local production to replace imported products in a manner that complements existing local producers and increases Hawaii's agricultural self-sufficiency; 4) Alternatives in the establishment of sound financial programs to promote the development of diversified agriculture; 5) Feasible strategies for the promotion, marketing, and distribution of Hawaii agricultural products in local, national, and international markets; 6) Programs to promote and facilitate the absorbing of displaced agricultural workers into alternative agricultural enterprises. ADC has access to its

own funding with similar guidelines as those of the agricultural loan program of the department (HRS 163-1).

Chapter 166-1 relating to Agricultural parks specifies the Department of Agriculture's responsibility to plan, develop and manage agricultural parks,

> ...to develop public lands for the use of agricultural parks. New agricultural parks in partnership with any entity or organization and gives the park an exempt all statutes, ordinances, charter provisions, and rules of any governmental agency relating to planning, zoning, construction standards for subdivisions, development and improvement of land, and the construction of buildings thereon.

It specifies that preference can be given to a person who is a veteran with an honorable discharge, or who qualifies as a displaced farmer, or who operates a farm located in a zoning district where such use is a nonconforming use, or who qualifies as a new farmer, shall be given preference in obtaining an agricultural park lot (HRS 166-1).

Finally, State Law also includes a Right to Farm Act which contains language that supports farming as an activity and protects this activity in situations when the agricultural activity could be considered a public nuisance/ disturbance. This includes a declaration of support for farming: *" Declaration of public purpose. The preservation and promotion of farming is declared to be in the public purpose and deserving of public support"* (HRS 165) The State laws also include language in chapter 1B-1 about rural areas that allows areas that are not designated rural under State and County zoning to benefit from federal funding for rural areas if they fit the federal rural criteria. This could benefit rural towns on Oahu such as Waianae, Nanakuli and Waimanalo as there would fit the above description (HRS 18).

Hawaii State Planning Act. Hawaii Revised Statutes Chapter 226 is the Hawaii State Planning Act and contains language in support for food security, agricultural self-sufficiency, and small-scale farmers (HRS 226-1). The following objectives are listed for agriculture: 1) Viability of Hawaii's sugar and pineapple industries; 2) Growth and development of diversified agriculture throughout the State; 3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being. As discussed above, diversified agriculture refers to any other industries than sugar and pineapple yet maintaining the focus of export-oriented agriculture (State of Hawaii, 2012). In other words, the first two objectives have been the focus of agricultural efforts in Hawaii since the decline of plantation agriculture in the 1950s (Philipp, 1953). Food production for local consumption is, however, not part of the objectives but instead quickly mentioned as part of the

policies. For example, in 2013, SB2307 was passed by the State adopted legislation (HRS 103-D) with a policy to strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawaii's food producers and consumers in the State, nation, and world. Other policies mentioned include policy 4) to establish strong relationships between the agricultural and visitor industries for mutual marketing benefits; policy 11) to increase the attractiveness and opportunities for an agricultural education and livelihood; policy 13) to promote economically competitive activities that increase Hawaii's agricultural self-sufficiency, including the increased purchase and use of Hawaii-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D-104.

More support for agriculture can be found in specific plans and strategies prepared by the State of Hawaii during the last two decades including:

Hawaii Statewide Comprehensive Economic Development Strategy. The 2016-2020 Strategic Plan: Prepared by the Office of Planning (State of Hawaii, 2016), provides a blueprint for economic development. The report mentions several strategic objectives including 1) expand market reach of local producers to institutions and the military, 2) increase access to agricultural lands with affordable, long-term leases and necessary infrastructure, 3) grow the next generation of farmers and entrepreneurs in agriculture, aquaculture and mariculture, 4) develop meaningful forums for listening and sharing with the community on agriculture, aquaculture, and mariculture entrepreneurships, 5) support pest prevention, control and management, 6) invest in and subsidize infrastructure to revitalize agriculture, aquaculture, and mariculture, and 7) increase demand for, supply of and access to locally grown foods with the actions to: a) expand and improve branding and labeling programs to identify local foods, and b) support consumer education programs to help consumers know local farms and farmers. Agriculture, local food production, self-sufficiency and Indigenous Hawaiian knowledge of agriculture was mentioned as a focus area for all islands.

Hawaii 2050; Sustainability Taskforce. The report mandates per Act 8 of the 2005 Hawaii State Legislature, to develop a statewide sustainability plan for the 21st century – the Hawaii 2050 Sustainability Plan (State of Hawaii, 2008). Priority number 7 relates directly to local farming: 7. Increase production and consumption of local foods and products, particularly agricultural products. The report further states that food self-sufficiency is one of the foundations of a sustainable community; thriving local farms also help preserve green space and a rural way of life, and make Hawaii less vulnerable to external catastrophes.

Hawaii Department of Agriculture Strategic Plan. The report mentions several strategic priorities of the HDOA (2008) to support local farmers including promote Hawaii products in local, domestic and foreign markets; provide tools to assist marketing and add value -branding, truth in labeling, statistics, market intelligence; facilitate development of value added products and other activities to increase farm income; strive to achieve the most efficient and productive use of the state's lands to attain the state's food and energy objectives; address labor and agriculture worker housing issues.

Rural Economic Development Planning Report. The report makes several recommendations for rural areas concerning local farmers, entrepreneurs, and food self- sufficiency (SMS Research & Marketing Services, Inc., 2010). For example, the Community Development Plan from Waianae, Oahu- a community where many local farmers reside suggested "*No increase in land designated for residential uses,*" and "*provide zoning and tax incentives for people to farm the land.*" The report makes several recommendations to support rural economic development including supporting entrepreneurs in the community focused on agriculture, programs to support stable markets for agricultural producers, and offering skills training for new farmers beyond the daily operations skill set such as finance, marketing, business management skills are needed to create successful projects. Many rural entrepreneurs, for instance, could not bridge the gap between a promising idea and a viable business plan.

Increased Food Security and Food Self-Sufficiency Strategy. This strategy sets forth objectives, policies and actions to increase the amount of locally grown food consumed by Hawaii's residents (State of Hawaii, 2012). The economic impact of food import replacement is significant. Replacing just 10% of the food Hawaii currently imports would amount to approximately $313 million dollars that would remain in the State. The strategy has three objectives: 1. Increase demand for and access to locally grown foods 2. Increase production of locally grown foods, and 3. Provide policy and organizational support to meet food self- sufficiency needs. For increasing production the strategy prioritizes increasing production of locally grown foods, improving agricultural infrastructure including agricultural parks, irrigation systems and distribution systems/facilities; encouraging a variety of distribution systems to move goods to the market place. Nationally, direct consumer sales, farmers' markets, community-supported agriculture organizations and farm-to-school programs have all increased. The strategy also supports multi-functional food hub facilities or food incubator facilities to handle aggregation, processing, treatment and distribution; and to build the agricultural workforce, continue the "Green Jobs Initiative" which provides workforce development services for the agricultural, energy, natural resources and related industries.

Hawaii Agricultural Skill Panel Report. This report was an addendum to the Comprehensive State Plan for Workforce Development 2009-2014 (State of Hawaii, 2013). This report covers a number of themes for a strong agricultural workforce for agricultural self- sufficiency including 1. increasing youth education and training, 2. garnering government support, 3. streamlining regulations and policies, 4. fostering partnerships and collaborations, 5. creating incentives for industry and employees, 6. improving the industry's image, 7. access to markets, and 8. disseminating and sharing resources. The recommendations include develop an "agriculture workforce training and funding resource list" (a database) through a state-funded initiative; support and promote agricultural education pathway programs and vocational training through mentorships, internships, on-the-job training, and apprenticeship programs; identify training needs for new and existing farmers in skill areas like business management, record-keeping, agriculture economics, etc.

Summary of Key Concepts and Ideas

The following is a summary of key food planning and the Hawaii food security discussion from Chapter 1 and 2. Food planners contribute to several areas of local food systems development including: 1) access to healthy food by underserved people, 2) linking farmers with underserved people, 3) farm to school programs, 4) removing barriers to food production through municipal codes and zoning, and 5) assisting start-up projects to access grants. Planning theory can be described as at theory of good practice. Planners are known for advocacy planning, bottom-up planning, community participation, and facilitating collaboration among diverse stakeholders on micro levels. While planners are champions of those practices, food systems planning has generally lacked participation by farmers, perhaps because planners have been more at home in urban and metropolitan areas and unfamiliar with rural and farming communities.

From a planner's perspective, tighter producer-consumer linkages of local food systems is likely to emit less fossil fuel in transporting the food and less chemical and fossil-fuel pollution in producing the food. Planners also support local farmers' opportunity for receiving a larger share of each dollar spent on food, and creating a stronger local economy through deliberate purchases on local foods by public institutions such as schools, hospitals, prisons, and others. USDA supports sustainable agriculture as a type of production that contributes to environmental benefits through responsible management of the natural resources and.

However, tighter linkages of producers and consumers contributes to a local, family, and community-based ethic that stresses the values of sustainability, interdependence, environmental protection and local production for local consumption. U.S. social movements have adopted this ethic including the movement for Civic Agriculture, Permaculture, Food Sovereignty, Slow Foods and others. Food security for farmers has to do with encouraging more food production and meeting the demand from consumers by continuing to grow good food. Local food movements have several benefits for farmers including that they help reconnect people to the land— the source of the food they eat— and the people who grow it. Increased consumption of locally grown foods results in opportunities to employ more people in agriculture, the ability of farmers to capture a larger share of the retail market, and keeps consumer dollars circulating in each local economy. Farmers who produce food for local consumption and perform their own marketing and sales are referred to as direct-sales farmers, alternative farmers, and/or farmers producing food for local consumption. In Hawaii, 33% of farmers produce food for local consumption— a larger portion of farmers compared to the U.S. national average. For farmers, food security refers to encouraging food production to be spread across the country.

Despite a decline in the overall farming population, farm income, and farm sizes for Hawaii, farmers participating in local food systems are likely to continue to grow parallel with, if not faster than, the U.S. national trend. There is a political push on all Counties in Hawaii to enhance food security by increasing local food production in part because the islands rely on 90% of the food imports and the risk is that disasters might disrupt the islands' food supply further. Approximately half of all foods sold directly by farmers is fresh or raw produce. Direct-sales farmers usually operate small-scale and diversified farms. Historical trends in Hawaii show that the size and sales of conventional farmers operations have declined the last fifty years while the population and sales of alternative and DTC farmers have increased.

In Hawaii, food sales to grocery stores account for 82% (124.5 million) of all local food sales, the remaining 18%, $27.8 million, are sales in farmers markets, CSAs and directly to consumers. Direct-sales farmers rely on urban and metropolitan markets for their sales. Their customers a combination of farmers markets, restaurants and hotel, CSAs, grocery and retail stores, roadside stands, and on-farm sales.

Farmers and low-income residents in Hawaii live in rural areas such as Waianae with higher levels of economic poverty and food insecurity compared to the Hawaii average. Policy and programs must reflect this social dynamic. But rural communities also have a historical and cultural legacy of producing food and many people still grow food. While programs promote access to affordable and healthy foods for the SNAP participating population, farmers and rural resident can benefit more from agricultural programs to increase local food production. Such programs could create employment, alleviate poverty, and create a situation of self-sufficiency where the community can rely on its own ability to resolve its needs. Naturally grown and culturally relevant food has the potential to improve health conditions while providing an opportunity to engage in culturally restorative subsistence practices. Even though there are high rates of food insecurity in rural communities in Hawaii, there are many people growing their own food with an abundant land-base that is ideal for farming.

Chapter 3
Talk Story with Hawaii's Small-Scale Farmers

The people of this world are like the three butterflies in front of a candle's flame. The first one went closer and said: I know about love. The second one touched the flame lightly with his wings and said: I know how love's fire can burn. The third one threw himself into the heart of the flame and was consumed. He alone knows what true love is. Farid al-Din Attar

The unexamined life is not worth living to a human. Plato

I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived. Henry David Thoreau, Walden

Overview

Chapter 3 "*Talk Story with Hawaii's Small-Scale Farmers"* introduces the methods and is divided into two main sections. The first section present the reasoning for and theories of the mixed methods used in each tier of data collection and discusses the approach to research validity. The second section illustrates the research tools for data collection and categorization of data. The section also includes a more extended description of the data that was collected through interviews, surveys, focus groups, and participant observation for each of the three tiers of research.

A quick recap of Chapter 1 shows that the absence of planners and food planning the last half decade might be explained by the fact planners have been more "at home" in urban and metropolitan areas and unfamiliar with rural and farming communities. Yet community food security involves, in part, a focus on sustainable food systems that maximize community self-reliance and social justice (Hamm and Bellows 2003), which planning research has been lacking. As a result, the aim of this dissertation is to create conceptual and pragmatic linkages among planners and farmers in Hawaii to improve community food security efforts. The research questions address: 1) an enhanced understanding of the conditions that promote thriving small-scale farmers in Hawaii, and 2) an enhanced understanding of how and why planners should work closely with farmers on the ground level to develop policy programs that increase

local food production. To improve the economic well-being of small-scale farmers in Hawaii's rural communities, this dissertation explores solutions by examining the lived realities of existing farmers selling local food. Pathways for planners to increase local food production through grassroots farm policy in Hawaii will require a good understandings of farmers' motivations, general needs and priorities in Hawaii. To that end, the research offers to produce rich, descriptive, and participatory stories of people who produce food for local consumption in Hawaii. In addition, documenting the author's problem solving efforts to collaborate and build relationships in Hawaii's farming communities will contribute to the understanding of how planners can support farmers.

Key Aspects of Research Design

This dissertation follows an ethnographic, embedded community participatory and action based research method. Various approaches to mixed methods influenced the method to facilitate a process that is a fair, participatory, rich, urgent, bottom-up, transparent, and accurate process. It was important to use a process that involved research participants in shaping the focus of the study. Developing good relationships with the research population and in the rural community allowed for continuous back and forth exchange of information to validate any proposed solutions. Some parts of the data collection were collaborative— an aspect that can strengthen validity and accuracy by utilizing a team approach.

Research design and process. This sections explains the relationship between interviews, surveys, participant observation, and focus groups from the multiple data collection tiers. When this project first began the goal was to understand small-scale farmers better. The year was 2011 and the author had not yet immersed himself in Hawaii's farm communities and was just learning about the realities of small-scale farmers. The initial eleven interviews helped grasp the relevant research design, questions and scope based on the perspective of those farmers involved. Most farmers would talk story about the same things in the one hour interview. Their stories generally included a history of their farm and the reasons they started farming. They described their social values that motivated them to become farmers. Interviews were a good approach to understanding farming from the perspectives of farmers, their goals, hopes and dreams, needs and priorities, and their strategies to succeed. Conclusions from those interviews were published in Azizi and Mostafanezhad (2014); Mostafanezhad, Suryanata, Azizi and Milne (2015); Mostafanezhad, Azizi and Johansen (2016); and Mostafanezhad, Suryanata, Azizi and Milne (2016). A phenomenological approach helped to guide this section of the research. It was a helpful guide to a research design that allows the research populations lived perspectives and goals as

part of the research design. Phenomenology became popular as the need to describe human relationships to place and the local environment became more urgent: a phenomenological approach holds "*that people and environment compose an indivisible whole*" (Seamon, 2000, p1). Franck (1987, p 65) argues that a phenomenological approach gives attention "*to the essence of human experience rather than to any abstraction of experience*" and is well suited for environment-behavior research with the goal of providing a rigorous description of human life as it is lived and its first-person concreteness, urgency, and ambiguity (Seamon, 1979; Li, 2000; Seamon, 2000).

To learn even more about farmers, the author became a volunteer at Kahumana Organic Farms and was part of the farm crew for a year in 2013. The author then worked with Naked Cow Dairy in Waianae for a couple of years— a small-scale dairy and creamy operation. These experiences were a deliberate part of the research design and are presented in more detail in Chapter 4. During those two years, the author did not collect any additional data. Kahakalau (2017), based on writings of Paulo Freire, suggests that after a period of immersion it can be good for the researcher to temporarily step away and let the knowledge "marinate."

In 2015, the temporary period of marinating was over. The author received a research stipend from Gålöstiftelsen of Sweden to study entrepreneurial farm models in the U.S. and produce some lessons learned. The stipend allowed for twenty-five interviews with twenty two people who operated nineteen direct sale operations of which some were follow-up interviews from the preliminary stage. Some of the farmers shared their financial data as well. Three of the interviews were in Whidbey Island, WA to allow for comparisons between Hawaii's direct sale farmers and those on the U.S. mainland. One important aspect to all interviews were the stories of how farmers arranged their labor both paid and unpaid. Many farmers rely on volunteers, interns, and apprentices. As a result, workers were interviewed and surveyed to better understand their experience on farms. Many of the farmers that participated would make some portion of their income from farmers' markets; some data was collected from the farmers' markets. One interview was conducted with a farmers' market manager and a minor survey of the number of farmers that attend Oahu's most popular farmers' markets compared to non-farm vendors.

The data collection up to this point contributed to several objectives of the study including an enhanced understanding for farmers' needs, their strategies to maintain and scale-up operations, and understanding beneficial multiplier effects of successful farm operations. While other research stages contributed more to the understanding of priorities, all priorities are based on issues that were first highlighted as farmers' general need. As mentioned in Chapter 1, many of the farmers that participated at this stage generated a high average annual revenue of 90k compared to the average income of a small-scale farmer in Hawaii. The agricultural census shows that in 2017, 64 farmers who sold directly to consumers generated more than 50k per year out of 1,612 farmers in; moreover, 127 farms that sold directly to stores, institutions, and food hubs generated more than 50k per year of a total 878 farms (USDA, 2017).

The last interviews conducted in tier 1 stage of the research was in February 2017, and the author was coincidentally hired as a manager to start-up the Kahumana Farm Hub (KFH). That was the start of tier 2 of data collection in this research. Interestingly, the food hub development was done by Kahumana Organic Farms (KOF), a small-scale organic farm that had a large network of local customers. Food hubs present a different logic to the direct marketing of local food systems as they are essentially a middle man and not direct-sale. The first year at the hub was funded by a USDA grant. Collection of sales data was part of the job description. The author also collected additional data on the general needs of food hub operations, perspectives of food hub growers and management, as well as aspects of financial sustainability.

After nine months as the KFH manager the UHWO Imi Naauao encouraged more data collection in terms of interviews, surveys, and participant observations in regards to the food hubs effect on the nearby community. The focus was on collecting stories of the growers that participate in KFH especially Indigenous Hawaiian people, the institutional and operations requirement of a food hub, and how this model can shed light on economic development and Indigenous Hawaiian well-being. A survey was conducted with growers to collect more demographic information and understand their relationship with the food hub. Surveys were more secondary sources of information, interviews did a better job at describing the rich narratives that contribute to an understanding of the beneficial effects of the hub in the community. Interviews and surveys from tier 2 also contributed to the understanding for farmers' needs, their strategies to maintain and scale-up operations yet in a different way than tier 1 data collection. The results of this section are focused on farmers who operate food hubs and to enhance the understanding of existing assets in rural community aggregated through hub growers. During this

project, the author, as the KFH manger, wrote his own participant observation reflection notes starting in August 2017 and ending in March 2019. Over forty field notes were collected covering a range of topics pertaining to the author's involvement. The notes include everyday food hub operations, a better understanding of local customers, community partnerships, getting to know each grower and their history, but also the involvement with groups such as Imi Naauao, Hawaii Good Food Alliance, and the grant writing process. Field notes from collaborative group involvements contributed toward the understanding of farmers' priorities.

Coincidentally, the author was appointed the HFUU Policy Committee Chair on State level. The first task was to conduct a membership survey. Because most members were small-scale, locally oriented farmers, the author was partly selected as the Chair because of his past experience with surveys. The survey was designed in collaboration with a HFUU team of people including President Vincent Mina, Business Consultant David Fischer, Secretary and Operations Manager David Case, Communications Chair Keith Ranney, Membership Chair Melissa Jenks-Olivit, and Vice-President Anny Burch. Dr. Christy Mello at UHWO assisted with the development of survey questions. The survey was conducted online using Qualtrics survey software. It was opened April 28 and closed August 31, 2018. A total of two notices were sent out to all HFUU member emails during this time. A total of 145 people, 10% of HFUU membership in 2017, responded to the survey. The response rate is high enough that we can utilize survey responses to make larger conclusions about the HFUU membership keeping in mind the limitations of voluntary surveys. A survey report was published on the HFUU website in October 2018.

The survey report presents the main findings in tier 3 of data collection and sheds light on farmers' needs, priorities, strategies, and beneficial multiplier effect. The results of that survey also helped in the work with Imi Naauao: the research project with University of Hawaii at West Oahu (UHWO). Because as the UHWO project progressed, the team was encouraged to think of the main policy issues and develop policy papers to address some challenges from the field. Participant observations helped every step of the way because they are essentially self-reflection notes by the author with suggestions for making improvements in community oriented food hubs. The Imi Naauao focus on policy was helpful because the author received feedback from the entire team including policy expert team members in the discussion on farmers' priorities. Some follow-up interviews were done specifically to understand more about certain issues of labor, housing, and food hub operations that were used to develop the policy papers for Imi Naauao.

Being a member of 2019 NFU Policy Committee and HFUU Policy Chair supported the objectives of the study in a few different ways. From relationship building with the other five members of the NFU policy committee, who all operated family farms in the U.S. mainland, the author was able to better grasp the difference between needs and priorities in Hawaii and on the U.S. mainland. Some of them operated direct-sale organic operations while others were large conventional farmers.

Good friendships led to many side conversation and enhanced the authors understanding of many policy issues with which he was unfamiliar. The official work of the NFU committee was also helpful to better understand farmers general needs and priorities. Primarily, the author learned the grassroots process of deriving a participatory Policy Statement (general needs), and Special Orders of Business (priorities). The author also learned the logic for these two different items: while all issues that concern farmers make it into the policy statement, a few issues that are more pressing than others and need more legislative attention during the year. Those issues were voted in as priorities or Special Orders of Business (NFU, 2019). The NFU process was helpful later when working in Hawaii with the Farmers Union's Policy Statement. The NFU formats and logic was adapted to the HFUU Policy Committee and some of the results are posted on the HFUU website including an updated HFUU Policy Statement, Special Orders of Business, and a An Open Letter to State regarding procurement programs for food hubs. Figure 3.1 Conceptual Framework for Data Collection and Analysis presented the logic of data collection and study objectives.

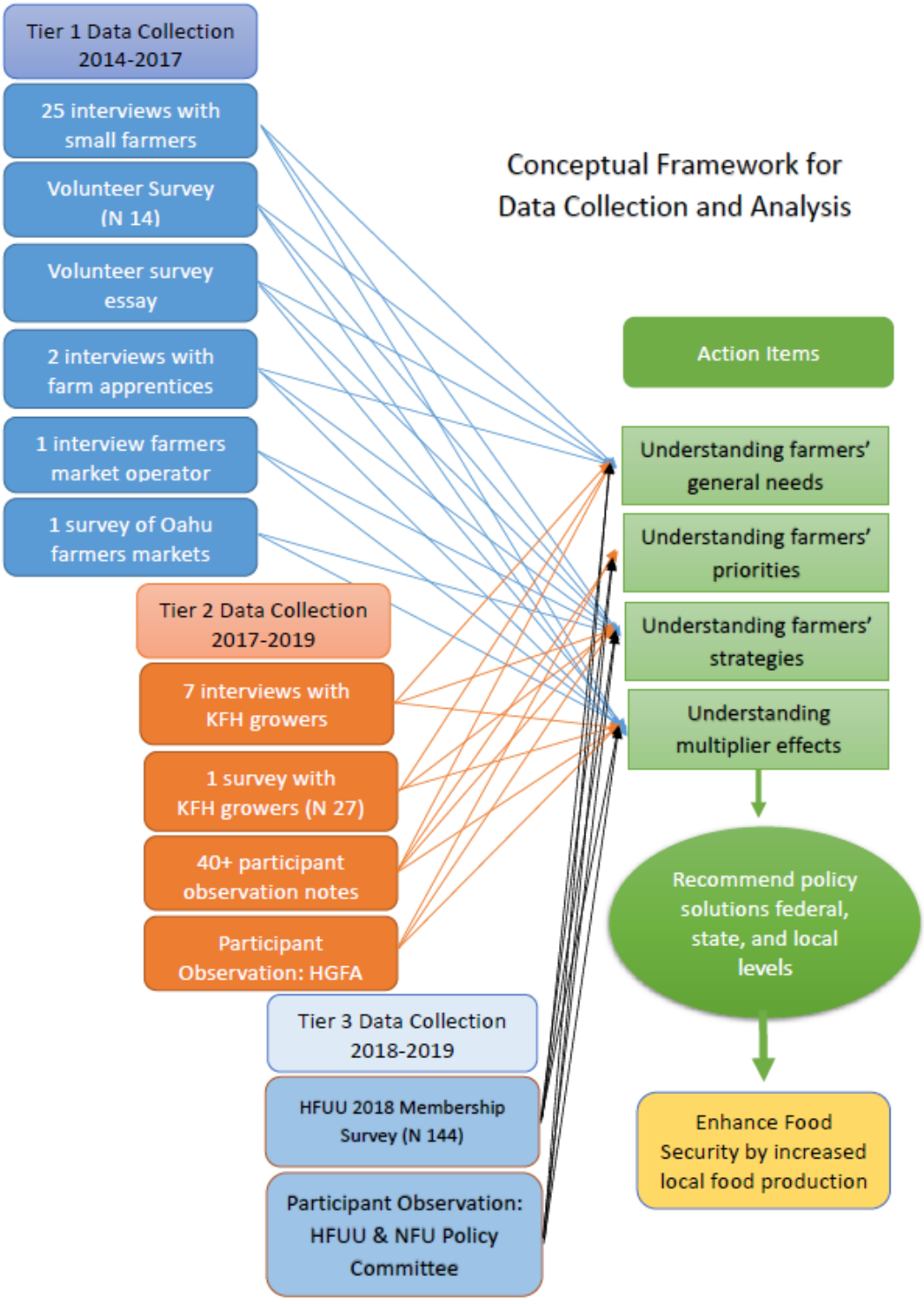

Figure 3.1 Conceptual Framework of Data Collection and Analysis

Farmers coming to planners. Recent reports of local food systems have recognized a gap in the industry in understanding how to incentivize small-scale farmers and local food production in response to local, state, and federal programs (Martinez et. al, 2010; Low et. al, 2015). This dissertation argues that the gap in knowledge can partly be informed by planners actions in the farming communities by planning with farmers. As noted in Vitiello and Brinkley. (2013) and by Pothukuchi and Kaufman (1999), food and agricultural policy in the U.S. has moved into the hands of rural extension agents and large agrifood business after WWII. With the rise of alternative forms of agriculture, however, such as local food systems it remains a question if current policy support for large industrial export-oriented agriculture can support small-scale, locally oriented family farmers (Lyson, 2004; Carlson, 2004).

This dissertation argues that planners can play a role in supporting local farmers because if they do not, alternative farmers might be ignored. This would require that planners learn more about farmers and rural development. Moreover, a recent report shows that a majority or 53 percent of farms marketing food directly were located in metropolitan counties, and two thirds or 67 percent of direct food sales were from farms located in metropolitan counties (USDA, 2016b). This further brings farmers into the jurisdiction commonly associated with urban planners. This research should give planners an opportunity to improve interdisciplinary understanding of food systems— this is especially true as planners are new to and revisiting the field of food and agricultural planning (e.g. Pothukuchi and Kaufman 1999, 2000). In particular, planners can learn from food sovereignty movements in the U.S. and abroad through an increased understanding of the reality of small-scale farmers in the local food system.

Methods that treat people fairly. It was not until 2017 that the author was presented with a research method and process that was specifically developed for research in Hawaii's Indigenous communities. That is when the concept of Maawe Pono was presented to him by Dr. Kahakalau as part of the UHWO Imi Naauao project. Maawe Pono is Hawaiian and translates to "treading the trail of honor and responsibility" (Kahakalau, 2017). Because it is a value system, Maawe Pono also allowed the Imi Naauao team to come together from diverse backgrounds and work toward a common cause. Perhaps more importantly, it fills a metaphorical void that scholars and researchers often ignore of upholding and magnifying our values in connection to our academic work (Kahakalau, 2017). Maawe Pono believes in nonlinear research for Hawaiians, by Hawaiians, using Hawaiian methods of data collection, analysis and presentation (Kahakalau, 2017). Moreover, Maawe Pono is accountable to Hawaiian values, the

culture, the communities and future generations (Kahakalau, 2017). Maawe Pono also includes a strong heuristic element in that it involves the researchers on a personal level, includes intuitive judgment, a spiritual dimension and relies on common sense—a shared Indigenous practice (Kahakalau, 2017). Furthermore, Maawe Pono utilizes both quantitative and qualitative data, gathered from multiple groups of co-researchers, in this case, Hawaiian language students, teachers, parents and community members, who shared their thoughts. What was nice about Maawe Pono was that it allowed the author to go deeper within the methods that were already being utilized such as phenomenology, participatory action research, and aspects of relationship building. In this dissertation, Maawe Pono: 1) allowed the research participants to speak their own truth in their own words; 2) allowed people to co-design research questions based on their lived reality; 3) allowed the research population to be relaxed and conformable to share their perspectives; 4) all in all, allowed the researcher to take a listening role and allowed the research population to voice their views as the experts in the field. Central to the Maawe Pono process is the idea of "talk story" or having a relaxed conversation with the people involved in the research and aim to make them feel comfortable so that they want to share their stories. Dr Kahakalau suggest that in the communities we work such as Waianae, "talk story" methodology is very important consideration because it is the way our people prefer to communicate. As a result, interviews through face-to-face conversation are appropriate or preferred when collecting data from rural and Indigenous communities in Hawaii.

Action Coding with Grounded Theory. Charmaz (2006) suggests grounded theorist (GT) collect data and begin to separate, sort, and synthesize these data through qualitative coding. Coding means to attach labels to segments of data that depict what each segment is about. Coding distills data, sorts them, and gives us a handle for making comparisons with other segments of data. Grounded theorists emphasize what is happening in the scene when they code data (Charmaz, 2006). In this research, GT coding methods were used borrowing from Charmaz (2008) idea on gerunds. To depict the farmers' urgency and action, a *gerund*— verbs that functions as a noun such as end*ing*, ask*ing*—does a better job of using language that has urgency and spoken by the first person. GT coding with gerunds also does a good job utilizing the language of the lived perspectives and not a technical academic language that the from which the research population is often far removed. Using language in farming research that farmers understand was a priority in this project and has been advocated by other scholars (Stevenson and Klemme, 1992; Stevenson et al., 1994).

Action research and ongoing evaluation through immersion. Farmers that do direct to consumer sales engage in a different agriculture compared to conventional farmers. Their challenges and solutions are unique to them and would often not apply to conventional farmers. Many of them are new farmers and have not operated a farm for more than ten years; many are new to farming and they do not come from a farming family or have plantation era experience (Azizi and Mostafanezhad, 2015). Their farms are often small only a few acres and their operations rely on many people's involvement and often interns, apprentices, and volunteers. Many of these farmers are environmentally minded because they operate along the lines of sustainable agriculture and wanted to be farmers to be a solution to larger world problems (Azizi and Mostafanezhad, 2015). There is still very little information available about these farmers especially for Hawaii. This dissertation highlights their lives by: 1) synthesizing current information available about these farmers from published strategies, reports, agricultural census, and other publicly available information, and 2) presenting their stories, motivations and challenges through interviews conducted during farm visits.

An enhanced understanding of these farmers include stories about their customers- the people that want to learn more about food where it comes from, to meet their local farmer, to get educated and spend money in an environmentally and maybe socially conscious ways. It also comes with understanding the local restaurants and stores that want access to local food that in turn give their operations an edge. It also comes with understanding farmers own responses to labor challenges including having a good system for workers, interns, apprentices, and volunteers without whom much of local food production would not exist. Research suggests that respondent validation by systematically soliciting feedback about data and conclusions from the people that are studied helps minimize research bias (Maxwell, 2013).

Brooks (2002) suggests that rarely do planners know the single best way to solve a given problem, but we act as if we do in that once a decision has been made and a certain plan has been adopted we turn our head to a different problem. Inefficient or harmful programs can continue for years without reaching the objective of social learning. But if each planning action gets adopted as a social experiment where the process of evaluation of the effectiveness of a decision or plan was continuous, then goal-achieving strategies in planning could be expanded. Planners seem to be too busy to evaluate, implement, and engage in feedback activities (Brooks, 2002). Participatory Action Research (PAR) was a good fit for this research for several reasons. PAR seeks to understand and improve the world by

changing it; at its heart is collective, self-reflective inquiry that researchers and participants undertake, so they can understand and improve upon the practices in which they participate and the situations in which they find themselves (Baum et. al., 2006).

During this dissertation the author was immersed in the farming community of Waianae and became a rural resident, a farmer, a cheesemaker, a local farm policy advocacy and a food hub manager. Through the many relationships built, the author was able to seek continues advice of the research population on the urgent problems that need to be resolved. Chapter 4 describes the rural immersion and relationship building in more depth. The relationships formed during this research allowed for continues evaluation and validation of proposed actions. Validation, evaluation and designing research as an experiment is an important aspect of planning research (Brooks, 2002), PAR (Baum et. al., 2006), and Maawe Pono (Kahakalau, 2017). For example, Brooks (2002) suggests that an evaluation component can answer: 1) to what extent the course of action is solving the problem, and 2) what are the attitudes of the participants toward the course of action? Kahakalau (2017) suggests that Maawe Pono requires the active involvement of a specific group or community concerned with the issue at hand, who become essential co-researchers in the process. In fact, Kahakalau (2017) says, rather than postulating the primary researcher as an authority figure who collects, interprets and presents the findings, Maawe Pono situates various groups of co-researchers as joint contributors and investigators.

As a result, using methods such as PAR, Maawe Pono and formulating research as an experiments are suitable for research that is action based. Moreover, ongoing evaluation and validation of proposed actions through immersion and relationships are key components that enhance the action. Furthermore, in PAR the reflective process is directly linked to action, influenced by understanding of history, culture, and local context and embedded in social relationships (Baum et. al., 2006). During this project the author was encouraged to keep a journal to allow for reflection and contemplation of the researcher's personal experience. This was also a component of UHWO Imi Naauao research. Chapter 4 presents the author's personal journey and includes some writing based on the author's journaling and participant observation. The Ph.D. Committee Chair encouraged the author to submit some of his journal writing for a 2018 biography completion partly because of the connections of the author's personal experiences and development of research interest. According to Escobar (2011) interactivity, connectivity and researchers' positionality are key characteristics of the attachment to place and are becoming central to the strategies of localization research to produce consistency in scientific accounts of reality.

Baum et. al. (2006) argues that PAR differs from conventional research in three ways. First, it focuses on research whose purpose is to enable action. Action is achieved through a reflective cycle, whereby participants collect and analyze data, then determine what action should follow. The resultant action is then further researched and an reflective cycle that perpetuates data collection, reflection, and action as in a corkscrew action. Second, PAR pays careful attention to power relationships, advocating for power to be deliberately shared between the researcher and the researched: blurring the line between them until the researched become the researchers. PAR is commonly used method for planning research that, as mentioned above, aims to link knowledge to action (Friedmann, 1995), understanding ethical choices based on the situational context (Campbell, 2006; Flyvbjerg, 1998), and power relations (Forester, 1989, 2006; Arnstein, 1969).

Research validity. In order to withstand scrutiny, qualitative researchers should spend time explaining their approach to validity (Maxwell, 1992). Maxwell (1992, p279) suggest that a common approach to validity is "*if qualitative studies cannot consistently produce valid results; then policies, programs, or predictions based on these studies cannot be relied on."* Critique for such a suggestion argued that no procedure will always yield true conclusions and validity is not a commodity that can be purchased with techniques, but rather validity is like integrity, character, and quality, to be assessed relative to purpose and circumstances (Maxwell, 1992). While Maxwell (1992) suggests that *understanding* is a more fundamental concept for qualitative research than validity, validity is not irrelevant.

This study was designed to find solutions to urgent problems faced by communities of local farmers that prohibit them from reaching success. It is a mixed method research partly because mixed methods can produce strong conclusions when components of both quantitative and qualitative results which can be compared and triangulated. Triangulation means to collect information from a diverse range of individuals and settings using a variety of methods that reduces the risk of systematic biases that derives from using only one method (Maxwell, 2013). In this dissertation data was collected from a variety of sources including interviews, surveys, monthly revenue and cost sheets, participant observations, existing literature and reports, and focus group settings each intended to compare and contrast the accounts studied. This dissertation seeks to interpret phenomena not on the basis of the researchers perspective or categories but those of the participants in the situations studied. Maxwell (1992, p289) suggests that "*interpretive accounts are grounded in the language of the people studied and rely as*

much as possible on their own words and concepts." This dissertation utilizes Charmaz (2008) a style of coding with participants' original language by gerunds (described above). Another aspect of research validity is factual accuracy i.e., that they are not making up the things they saw or heard (Maxwell, 1992). In this dissertation almost all interviews used were recorded and transcribed verbatim. A few interviews had background sound disturbance and the author took detailed notes to preserve the original accuracy of the responder.

Another important aspect of research validity discussed in Chapter 1 limitations has to do with the extent which one can extend an account of a particular population or situation to other persons, times, and settings than those directly studied. To that end, this dissertation analyzes the accounts of people involved in the study to make a wider conclusions for direct sales farmer population in Hawaii who was not involved in this study. This dissertation also offers a few conclusions for direct sale farmers that also would apply to small-scale farmers from the U.S. mainland based on Hawaii observations.

Two more important issues of validity for qualitative researchers are the researcher's bias and reactivity (Maxwell, 2013). Explaining possible biases and how to deal with them is important to qualitative research (Maxwell, 2013). In Chapter 4 the author writes about his personal journey and how it intersects with this research. A key aspect of this research is to explain the researcher's positionality. Positionality refers to the immediate relationship between the researcher and the people being investigated (England, 1994).

The influence of the researcher on the settings or individuals studied is known as reactivity. The goal for the qualitative researcher is to prevent differences between the researcher and the settings and individuals studied from affecting the outcome, but eliminating the actual influence of the researcher is impossible (Maxwell, 2013).

Several aspects of the research process can decrease the risk of bias and reactivity. For qualitative researchers, an increased use of *numbers* from mixed methods allows the researcher to support claims that are inherently quantitative (Maxwell, 2013). In this dissertation, tier 1 data collection provides mostly personal narratives and in six cases, crucial numbers for their operations were gathered. Tier 3 data collection provides more numbers than narratives yet does include an important essay question on farmers priorities. The various tiers of data collection allow for triangulation of data but also

comparisons across different cases. Comparisons, including the comparison of the same setting at different times, can address one of the main objections to using qualitative analysis for understanding causality- their inability to explicitly address the counterfactual of what would have happened without the presence of the presumed cause (Maxwell, 2013).

The author also wanted an enhanced understanding of the stages or cycles of farm operations especially as many farmers involved in the study had just started their operations which is also a characteristic of Hawaii's farm population discussed in Chapter 2. Thus, five farmers were visited several times between 2011 and 2019. Maxwell (2013) argues that intensive, long-term involvement observation through repeated observations and interviews often provides more complete data about specific situations and events than any other method (Maxwell, 2013). Both long-term involvement and intensive interviews allow the research to collect rich data that are detailed and varied enough to provide a full and revealing picture of what is going on.

Finally, a key aspect of minimizing any personal bias is to do research collaboratively in teams. Interaction in the field among stakeholders and shareholders to form collaborations that can lead to co-learning, action learning, and institutional learning are common planning research aspects of social learning and intended to result in good outcomes for those involved (Healey, 1998). In Maawe Pono the Hawaiian concepts of "kukulu kumuhana" or the pooling of strengths, is an integral part of participatory research and how we as community advocates can collaborate to promote success for the community (Kahakalau, 2017). In other words, collaboration is an integral part of this research. Issues related to the researcher's theories, beliefs, and perceptual lens undergo scrutiny when working with others and can easily be exposed in collaborative work. In this research project the people studied were co-researchers that helped determine the design of the study at early stages. Many group interactions and collaborations informed this research including UHWO Imi Naauao team, collaborative grant writing, Hawaii Farmers Union United leadership team, and the Hawaii Good Food Alliance team. During UNWO Imi Naauao research with the Kahumana Farm Hub some early results were turned into grant proposal narratives for further funding; as a result, those narratives are a product of multiple peoples' ideas and not one single researcher's theories, beliefs, and perception. Shea Lah Kama, a UHWO student assistant has assisted with four interviews and transcripts for the Imi Naauao project that are coded in this study. Farmer participation at every level is a must for grassroots farm advocacy with the Farmers Union as it

was described in Chapter 1. This dissertation derived findings of farmers' needs and priorities from farmer-led collaborations within NFU and HFUU.

Data Collection Summary

This section presents more information about data collection. Interviews, surveys, and participant observation are explained. At the end of the sections table 3.1 Data Collection Summary shows the types of data that was collected to inform this project for each tier of data collection.

Interviews

Collection of data and sharing of stories by talk story interviews, transcribing, coding and theming has been the largest portion of the research methodology. By the authors estimation, a one-hour interview took six to eight hours of transcribing and resulted in ten pages of single-spaced writing. In addition, categorizing or theming each interview took two more hours. In total, this dissertation processed thirty-five interviews through the three different research stages. Approximately ten to fifteen hours of work was devoted for each of the thirty-five interviews, some extended beyond one hour, and approximately 350 to 525 hours of for all of them.

Interview Scope. The categories for interviews were driven by what farmers chose to talk about in the preliminary phase of the study. Some farmers shared more about certain categories than others. The following topics were covered in each interview:

1. History and Motivations- History of the farmer, the farm, and why they decided to start farming? How does the farmer experience change over time compared to initial expectations. Questions could include: why do you farm? what is the history of your farm? What social value drive you to farm? Has your values changed over time?
2. Finance and grants- Farmers perspective and experience on profitability grants, loans and finances. Questions could include: Are you operating a profitable farm? Has it changed over time? What are some revenue-making and cost-saving strategies that has led you to be profitable?
3. Marketing - Decision of direct sale versus more whole sale locally. Farm-to-customer sales communications. Questions could include: What is your breakdown of direct sales versus wholesales? Has it changed over time? What are some important decision-making consideration on your choice of customers/ markets?

4. Labor- How they organize staffing, compensation & service learning programs. Questions could include: how many people do you have working for you? What is your breakdown of volunteers, interns, and apprentices? Has it changed over time? Do you have a training/educational program?
5. Products and services for revenue creation- Development of products and services such as value-added production and on-farm tourism. Questions could include: what products do you offer? Are there products or services you have stopped offering? What considerations helped you make the decision of what to produce?

Anonymous. People who participated in the research were anonymous for several reasons. From the experience with preliminary stage interviews the authors felt that farmers were more comfortable being anonymous, and in most interviews people also requested to be anonymous. Some farmers operate in the informal economy and while it is a goal of this project to represent their voices too, the goal was not to share their identify. As a results, farmers in Chapter 5, 6, and 7 have been given replica names; one name is used consistently for each of the farmers that participated.

Tier 1 interviews. Table 3.1 summarizes the twenty-five interviews that was conducted with twenty-two farmers from nineteen different operations. The remainder of this section describes the categories and results of table 3.1. The interviews were collected in the years of 2014 to 2017. Of nineteen, ten farmer operated on the island of Oahu, five from Hawaii Island, one farmer from Maui was interviewed on Oahu, and three farmers from Whidbey Island in Washington State. On average the farmers had 3.8 acres in production and often extra land that was not in production. The median farm size was 3 acres in production. The smallest farm was less than ½ acre in production and the largest farmer ten acres in production. Land tenure arrangements varied from private ownership (O) to private leases or private rent (Pr. L.) and public leases (PL).

Most common was private ownership of land, 80% of operations owned their own land. Four of the remaining five operations rented or leased and one farmer had a public lease. Farmers had operated 7.8 years on average and 5 years median. The longest operation was thirty years and the shortest was less than one year. All but three farms had operated less than ten year and thus 84% of the farmers are considered beginning farmers with less than 10 years in operation at the time of the interview. Almost 90% of farmers were new farmers which means that their parents were not farmers. About 95% of farmers operated with volunteers and interns either from outside the farm or unpaid help from within the family. Intern programs including stipends were often developed by farmers as an extension to existing volunteer programs for volunteers from outside the farms. Some farmers had these programs

alongside paid labor; only 58% of farmers operated with paid labor. Almost a third of farmers had non-profit organization and several more had plans of incorporating non-profit status in the future. About 37% of farmers had received grants and in some cases they were not non-profit operations.

All farmers in the study were fully committed to direct to consumer sales and sold all their proceeds locally on the farm, to grocery and health food stores, at local farmers market, through Community Supported Agriculture (CSA) subscriptions and to hotels and restaurants. Most farmers engaged in two to four different types of direct markets. About 63% of farmers had developed their own value-added products from raw ingredients that they produced on the farm. Another 37% of the farmers had on-farm tourism which varied from educational and recreational tours to bed & breakfast operations and retreats. About half of the farmers were Certified Organic and about $124k average annual revenue of the twelve farmers that reported it. The median annual revenue was $48k and the largest reported at the times of interviews were $360k.

The total revenue of the twelve farmers that submitted numbers from Hawaii was approximately $1.40m in local sales- about 2% of $84.4m local sales in Hawaii at the time (USDA, 2016). Some other demographics that farmers shared was age, sex, ethnicity, and education level. The average age of farmers were 45 years old with the oldest at sixty seven years old and the youngest farmer twenty-five years old. About 85% of farmers were well-educated with a bachelor's degree or higher- only one farmer had a directly related degree in agriculture most had degrees in the liberal arts, and a couple of farmers had master's degree and one farmer had a PhD degree. Most farmers would say that their education background urged them to take action to create a more sustainable world and learning food production came later. About 37% of farmers were female operated farms with a female owner. Most farmers' ethnicity was Caucasian, but also Hawaiian, Chinese, Portuguese and mixed.

Five of the nineteen cases were with farmers that were visited for the initial eleven interviews with direct-sale farmers who host volunteers and interns on Hawaii and Oahu Islands. The purpose of these interviews was to again check-in with the farmers and see what progress they had made since the first interview. The purpose of returning to farmers was also to understanding whether farmers faced different challenges during a different time of their operational life cycle. The stages or cycles of farm business survival in the local food movement was a component in Tovey (2002).

Farm	Island	Acres	Years	New Farmer	Volunteer or Intern	Labor	Non Profit	Grants	Value-Add	Female	Ethnicity	Tourism	Marketing Mix	Annual Revenue	Land Tenure	Certified Organic	University Degree	Interview
1	Oahu	1	7	Y	Y	Y	N	Y	Y	Y	Caucasian	Y	On-farm, farmers markets, stores, restaurants/ hotels	156k	Pr.L	N	Y	Nov-14
2	Oahu	8	5	Y	Y	Y	Y	Y	Y	N	Caucasian	Y	On-farm, farmers markets, CSA, stores, restaurants/ hotels	360k	O	Y	Y	Oct-15
3	Oahu	3	5	Y	Y	N	N	N	Y	Y	Caucasian	Y	On-farm, farmers markets, CSA, grocery stores, restaurants/ hotels	n/a	O	N	Y	Nov-15
4	Oahu	2	6	Y	Y	N	Y	N	N	N	Caucasian	N	On-farm, farmers markets, CSA, stores, restaurants/ hotels	107k	O	Y	Y	Jan-16
5	Oahu	5	10	N	Y	Y	N	N	N	N	Asian	N	On-farm, farmers markets	60k	Pr.L	N	N	Feb-16
6	Oahu	0.5	6	Y	N	Y	N	Y	N	N	Asian	N	Farmers markets, stores, restaurants/ hotels	198k	Pr.L	Y	Y	Feb-16
7	Oahu	3	3	Y	Y	N	N	N	N	N	Caucasian	N	On-farm, farmers markets	108k	Pr.L	N	Y	Apr-16
8	Whidbey	2	5	Y	Y	Y	N	N	Y	Y	Caucasian	Y	On-farm, farmers markets	80k	O	Y	Y	Apr-16
9	Whidbey	4	5	Y	Y	Y	N	N	Y	Y	Caucasian	N	Farmers markets	n/a	O	Y	Y	May-16
10	Whidbey	4	2	N	Y	Y	N	N	Y	Y	Caucasian	N	Farmers markets and stores	n/a	O	Y	Y	May-16
11	Hawaii	4	16	Y	Y	N	Y	Y	Y	N	Caucasian	Y	On-farm, farmers markets, CSA	24k	O	N	Y	May-16
12	Hawaii	5	30	Y	Y	Y	N	Y	Y	N	Caucasian	N	Stores and restaurants/ hotels	n/a	O	Y	N	May-16
13	Oahu	7	4	Y	Y	N	N	N	N	N	Caucasian	N	Stores and restaurants/ hotels	n/a	O	N	Y	Nov-16

14	Oahu	1	1	Y	Y	Y	Y	N	Y	N	Hawaiian	N	Farmers Markets	12k	O	N	Y	Nov-16
15	Hawaii	8	9	Y	Y	N	N	N	Y	N	Caucasian	Y	On-farm, farmers markets, stores	n/a	O	Y	Y	Dec-16
16	Hawaii	2	5	Y	Y	N	N	Y	Y	Y	Caucasian	N	Stores	n/a	O	Y	Y	Dec-16
17	Hawaii	10	5	Y	Y	N	Y	N	N	N	Caucasian	M	Farmers markets, CSA	48k	PL	Y	Y	Jan-17
18	Maui	1	23	Y	Y	Y	N	N	N	Y	Hawaiian	Y	Stores and restaurants/ hotels	200k	O	N	N	Feb-17
19	Oahu	1	1	Y	Y	Y	Y	Y	Y	N	Caucasian	N	On-farm, farmers markets, CSA, stores, restaurants/ hotels	130k	O	N	Y	Feb-17
	Average	3.8	7.8	89%	95%	58%	32%	37%	63%	37%		37%		134k		53%	84%	

Table 3.1- Farm Description Summary

Tier 1 interviews also included two interviews with farm hand volunteer or interns and one interview with a farmers' market manager and operation. While most volunteers, interns, and apprentices that participated in this study did so through surveys, a couple of face-to-face interviews were conducted to get a richer narrative based understanding of the motivations behind this form of service learning and also understand, from an interns point of view, what constitutes a good farm stay. For both these interviews the farm host was also interviewed for this study. The farmers' market is a venue for perhaps the largest amounts of direct local sales. This dissertation wanted to understand the perspective of a farmers' market entity or manager. In the survey section some complementary data collection was done from Oahu most popular farmers' markets.

Tier 2 Interviews. Seven formal interviews was conducted beginning about one and half months into the study and lasting through May of 2018. Interview questions focused on: 1) personal experiences with food production and consumption; 2) resources; 3) how the participants view the relationship between wellness and economic development; and 4) cultural practices and beliefs related to growing food, which are pertinent to improving income or economic wellbeing in both monetary and nonmonetary terms. Cultural practitioners' stories of place were documented to preserve cultural knowledge and gain more insight into optimal land use practices and cultural assets. Interviewees were all Kahumana Farm Hub (KFH) growers involved in efforts related to cultural revitalization, improving health and social conditions, providing economic opportunity, or some combination of these components of an individual's collective well-being were examined. These interviews provided a more comprehensive picture of the region and sense of place. Food Hub participants comprise those who were selected for interviews.

KFH farmers include several types of food growers: 1) retired or kupuna farmers, 2) backyard and part-time growers, 3) educational farmers, 4) yard workers or landscapers, and 5) land owners with fruit trees. Some of the people working for Kahumana's farm crew are also KFH growers and use their time off-work to grow fruits and vegetables of which KFH then facilitates sale for. The seven people interviewed in this study included one kupuna farmer who grows squash, bananas, and pomelo; three land owners with fruit tree orchards on their farms; one person who receives fruits in exchange for helping land owners with yard work; one employee at Kahumana who farms on two separate locations on the weekends connected to land owned by his Church; one more Kahumana employee who receives fruits in exchange for helping land owners with yard work.

Surveys

Surveys conducted as part of this dissertation include 1) farm volunteer survey, 2) farm volunteer survey essay question, 3) Oahu farmers' market vendor survey, 4) economic snapshot survey, and 5) KFH grower survey. In addition to these five surveys, the largest survey with Hawaii Farmers Union United (HFUU) was described in Chapter 1 in the HFUU section on research methods.

Volunteer Surveys. To enhance understanding of the impact of agricultural volunteers in Hawaii, two surveys were conducted about the demographics of volunteers and the main challenges and solutions to their participation in small-scale, local agriculture in Hawaii. The survey report is included in the Appendices 3. Fourteen volunteers took the survey while the responses can help to better understand the volunteers on farm phenomena, there are not enough responses in this one survey to produce any findings about the volunteer population in Hawaii. Based on the first survey, another survey was established with two follow-up questions for volunteers. The first essay question ask the volunteer about their expectation before coming to the farm. The second essay question asks volunteers more generally about their perspective of what constitutes a good farm stay and how farm managers can do a better job with volunteers. Farmer interviews illustrate that agricultural volunteers can be crucial for the survival of an alternative farm operation; also, interns, apprentices, workers and other paid employees often start as non-paid volunteers before "*moving up.*"

Survey of farmers at farmers markets on Oahu. A very basic survey was done to tally how many vendors were food growers or farmers on Oahu's local farmers' markets. Markets surveyed included Kailua, Pearl Ridge, Kaka'ako, Kapiolani, Mililani, Blaisdell, Waianae, and Kapolei. Responses for each market help get a sense for participation of vendors who are farmers compared to non-farm vendors and hybrids. Responses are included in the text in Chapter 5.

Economic Snapshot Survey for Farmers. To gain better insight as to numbers and the income levels to support a full or part-time farm operation, a survey instrument was established to collect some basic numerical data on the revenues and expenses of six different farmer operations (see recording instrument in Appendices 2). The snapshot asks for current data and also gives the farmers to write down desired data. The desired section allows farmers to express what aspects of their budgets they are trying to change. Some interviews would start with the monthly snapshot information. Different sections of the economic snapshot contributes to a quantitative understanding for qualitative concerns

such as start-up cost, break-even, decision about wholesale versus direct consumer markets, monthly expenses, and labor expenses.

KFH Grower Survey. A survey was conducted with growers to collect more demographic information and understand members' relationship with the food hub. Surveys were more secondary sources of information as interviews did a better job at describing the rich narratives of growers. The survey was conducted using online software Qualtrics and survey reports were produced through Qualtrics website. A total of twenty seven KFH grower responses were collected most of them administered in person by KFH manager and later typed into the Qualtrics. Survey design took place beginning at about two and half months into the study through May of 2018. Surveys were designed to: (1) assess participants' needs; (2) determine income and sales; and (3) create a profile of the Waianae region for data on demographics, income, economic opportunity and obstacles, health status, and food insecurity. Surveys were distributed to the 90% of KFH growers at the time. The survey included a mixture of closed and open-ended responses and will be was completed while the researcher was present during activities.

Participant Observation

Tier 2 and 3 Participant Observation. The primary method of participant observation was consistently conducted during the entirety of the study given the authors' direct involvement and time spent with employees at Kahumana Organic Farm, KFH growers, and various food subsistence practitioners in the region. It involved detailed structured observations in field notes on informal activities and interactions. Structured observations include documentation of the social, economic, and cultural aspects of farmers' lives and their land use practices. Participant observation are valuable for capturing the experiences of farmers and growers and other participants through structured observations, which served as the basis for informal questions to ask while conducting participant observation. Observations took place while engaging in and supporting various growers' and practitioners' activities ranging from community gatherings, Farmer Union meetings, farmers' markets, and other gatherings. Structured observations were used to determine types of land-based practices and how they could be and are affected by policy. Further, the approaches, barriers, and successes of the Food Hub—designed to improve economic and overall wellbeing through agriculture—will be detailed. Participant observations helped every step of the way because they are essentially self-

reflection notes on the KFH manager's or author's role and potential for making good in local agriculture. A total of 40 co-participant observations were collected in the period from September 2017 through March 2019. When combined they equaled one hundred pages single spaced in a word document. Chapter 4 presents the author's personal journey and involvement based on participant observation notes.

Focus Groups. Finally, participant observation notes were collected from group involvements in this dissertation including involvement with Hawaii Good Food Alliance, Hawaii Farmers Union United, National Farmers Union, and UHWO Imi Naauao team meetings. In 2017, the author conducted an informal interview with a group of local produce buyers to collect their perspectives on working directly with farmers. Field notes from focus groups are included in the Chapter 6 discussion of KFH and have helped to understand some farmers priorities.

Data Collection Summary			
	Description	**Details**	**Date**
Interviews	11 interviews with direct-sale farmers that host volunteers and interns on Hawaii and Oahu Islands	Semi-structured, 1 hour each,	2011-2012
	25 interviews with direct-sale farmers including 5 follow-up interviews	Semi-structured, 1 hour each	2014-2017
	1 interview with a farmers market manager	Semi-structured, 30 minutes	2016
	1 interview with farmer organization	Semi-structured, 1 hour	2016
	7 interviews with KFH Growers	Semi-structured, 1 hour each (UHWO- Imi Naauao)	2017
Surveys	Agricultural Volunteer Survey	14 responses	2014
	Follow-up Survey Question for Agricultural Volunteer	28 responses	2015
	Survey/tally of farmers at farmers markets on Oahu	Kailua, Pearl Ridge, Kakaako, Kapiolani, Mililani, Blaisdell, Waianae, and Kapolei	2015
	Economic Snapshot Survey for farmers	6 responses	2015-2016
	UHWO/ Kahumana Farm Hub Farmer survey	27 responses (UHWO Imi Naauao)	2018
	Hawaii Farmers Union United: Farmer Needs Survey	144 responses	2018

Focus Groups	Local Buyers Focus Group- Grocery Stores	Semi-structured, 1 group conversation, 2 hours	2017
Co-Participant Observant	40 co-participant observation/ field notes	2-5 pages each, notes from my work as farm hub manager	2017-2018

Table 3.2 Data Collection Summary- The colors show different periods or tiers of data collection: Tier 1, in blue color from 2011 to 2017 all the data collection prior to Kahumana Farm Hub and Imi Naauao and includes interviews from the preliminary stage; Tier 2, in red color from 2017-2019 includes the data collected in affiliation with UHWO Imi Naauao project; and Tier 3, in green all the data collected in affiliation with Hawaii Farmers Union United.

Transcribing and Coding: Example from UHWO Imi Naauao Project

All interviews were transcribed into a word processing program. Each transcribed interview was 3,000-8,000 words. Once transcribed, each document was coded for emergent themes. Recurrent themes were extracted from the interviews. Themes were topics of conversation came up repeatedly in several interviews and that were deemed important. Transcripts from multiple interviews were combined in a large Word file including any additional field notes. Documents were numbered using the line

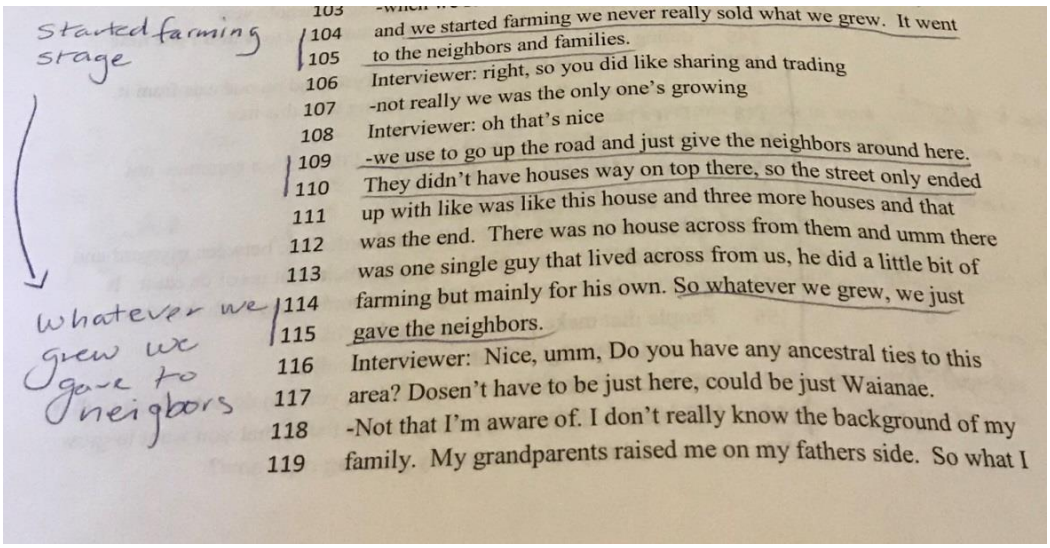

Figure 3.2 Coding Interviews- This image shows how coding was done. All seven transcripts from the interviews were combined in one word document that contained 4.132 lines of text. The main emphasize when coding was to use the original language of the person interviewed and their exact words if possible.

numbering function in Microsoft Word. The final document with transcripts from the seven interviews contains 4,132 lines of text that was coded. Farmers' urgency and action is described through a gerund in the themes. As noted earlier, gerunds are verbs that function as nouns such as end*ing*, ask*ing* and

more. This was helpful partly because it does a better job of using language that holds urgency for the people involved. Gerunds are used when it is part of the comments shared but also in other words and comments directly from the person interviewed.

Each transcript would generate anywhere between ten to twenty unique comments (similar to comments shown in figure 3.2). Eleven comments were the smallest case, 26 comments was the largest case; a total of 118 comments coded and on average 17 comments per interview. Once the whole transcript document was coded, it was organized in a spreadsheet matrix with coding categories in one column and farmer interviewed on the horizontal column. Comments and codes from interviews fit roughly within the following themes of: 1) Background and farm history- influences of farming before they became a farmers, cultural practices and social values guiding their practice; 2) Current farming activities such as description of the farm they own or work at, helpers on the farm and how the work is managed, combining farming with other life activities, and their relationship to KFH; 3) Challenges with farming such as access to and the cost of land, water, stealing in the area, and explanation of other activities they do beside farming and; 4) solutions- understanding how KFH has resolved some challenges that members are facing but also understanding the challenges that remain a hinder to increasing local food production in Waianae, Oahu.

2	**Theme/ Code**	**Comment description**	**Line numbers**
3	2. Current farming activities	Started farming	103-105
4		Becoming Part of the Farm Hub	19-21
5	1. Background and farm history	Hawaiian but no land	41-42
6		Country Zoning Stipulation	47-50
7	3. Challenges with farming	Access to Water	82-87
8	3. Challenges with farming	Watering at Night	92-94
9	2. Current farming activities	Started farming	104-105; 109-110
10	1. Background and farm history	Sharing with neighbors	114-115
11		Growing vegetables and fruits in the backyard	124-126

Figure 3.3 Organizing Coded Interviews 1- this image shows how comments were coded into themes: 1) Background and farm history, 2) Current farming activities, 3) Challenges with farming and 4) solutions to challenges. Before writing the results, the theme/coding column is sorted in an ascending order- this command reorganizes the comments according to themes.

Comments from people that were interviewed made up the foundation of this study and other forms of data collection help to supplement and add nuance or contrast to what was learned from the comments. As mentioned earlier, priorities were developed from focus group interaction, but topics selected as priorities were also discussed by farmers in interviews. Survey results help to provide the basic demographics of the people involved in KFH and share some numbers of the income people generate. The participant observation field notes from the KFH manager add to the discussion of how to handle a certain challenge from a managerial point of view and how to go about challenges that fall outside of the primary activities of the food hub including promoting increased economic development in the region and addressing farm theft.

Theme/ Code	Comment description	Line numbers
1	Used to grow flowers	3347-3348; 3376-3378
1.1	History of Farming	1603-1616
1.1	Ten siblings	2930-2931
1.1	Family background	2933-2936
1.1	Race background; feeling Hawaiian	2968; 2970; 2972
1.1	Used to grow flowers	3031-3039
1.1	Was always into selling	3148-3150
1.1	Brother work in pineapple fields	3168-3171
1.1	Sold fish salad at farmers market befo	3267-3269; 3277-3278; 3328; 3330-3331
1.1	What it was like when I grew up	3707-3708
1.1	Wai'anae sense of place	3801-3805
1.2	Hawaiian but no land	41-42
1.2	How to make Imu and thanksgiving	1738-1745; 1749-1758; 1770-1771; 1803-1819
1.2	How to make medecine from noni	1852-1859; 1895-1908
1.2	Make Imu 3 times per month	3811-3813
1.2	Why farm? Ships won't come..	3971-3976
1.2	Soursop leaves helps with cancer	983; 968-987
1.2	Dad has cancer and makes tea with le	994-1000
1.3	Sharing with neighbors	114-115
1.3	Influences before farming	533-538
1.3	Before the hub; sharing culture	1203-1206
1.3	Sharing culture	1207-1211
1.3	History of farm and farming	3731-3733; 3736-3739; 3741-3750
1.3	Extra unit for family members	411-415

Figure 3.4 Organizing Coded Interviews 2- Once all one hundred and eighteen comments were inputted each respondent's comments were color coded according to whether they were Kupuna, owners, helpers, or workers at Kahumana.

Chapter 4
My Personal Journey

Overview

In this Chapter 4 the author explains the connections between his personal journey of displacement at a young age and inspiration for studying this topic. In social science research, it has become more common for the researcher to explain their own positionality or the immediate relationship between the researcher and the people being investigated (England, 1994). Connectivity, interactivity and positionality are the correlative characteristics of the attachment to place and are becoming central to the strategies of localization advanced by social movements (Escobar, 1999). Escobar (1999) argues that it is only from a perspective of fully accepted interactivity and positionality that we can pursue consistency in our scientific accounts of reality.

During the process of writing this dissertation Dr. Manulani Meyer, a faculty at University of Hawaii at West Oahu and Principal Investigator of the Imi Naauao Project, encouraged scholars to "think about your own thinking." This was a a reflective practice she called "meta-thinking." What follows is a meta-memo style story about the influences, experiences, and thoughts that have guided the author and this dissertation research. This chapter is meant to inform the reader about influences that shaped the author's interest in research in the field of food and agriculture in rural communities and describe some of the collaborations and relationships that he has been part of in Hawaii. The story shared is in personal language and with photos.

My personal Journey

Rural life in Sierra Leone. The year of 2008 was an important year in my life. I had just finished my B.S. in Business Administration and I wanted to go out in the World to experience real life. I was 25 years old and spent three months with the United Nations Food and Agricultural Organization (UN FAO) headquarters in Rome, Italy and three months in UN FAO Freetown, Sierra Leone. I did not want to enroll in a master's program at the time, but a good offer from Hawaii Pacific University (HPU) was presented to me. I enrolled in a Master of Arts in Global Leadership and Sustainable Development with the arrangement that I would spend the first 6 months doing fieldwork with UN FAO.

The FAO office was in Freetown- the capital of Sierra Leone. It was a small office compared to FAO in some other African countries. There was about ten of us in the office; the staff was almost all from Sierra Leone or “Salone” as the they would say. They were very nice people: humble, respectful, and of high moral character. I spent most of the time in the rural areas collecting data for my office on the fair-trade cacao and coffee supply chain. We were trying to understand rural lending practices including microfinance along the supply chain and finding how lending practices affect quality of yields and relationships among people. It was fascinating! I met with every single stakeholder along the supply chain and talked to them in person, with a translator, about their overall life experience, day-to-day life and their agricultural livelihood. I also got some experience with qualitative research: collecting a vast amount of stories from people in the field and analyzing their responses. Some people belonged to cooperatives that marketed their yields through fair trade initiatives. Those fair-trade markets were marketing connections to Netherlands and Germany that FAO had helped arrange. Others did contract farming and exported coffee and cacao conventionally. In some rural villages nonprofits established community banks to give farmers access to finance, but most villages did not have a bank and had to borrow money from people within the particular value chain whether they were coffee or cacao

growers. I observed how the people on top of the supply chain, the buyers, controlled many of the activities further down the supply chain through their lending practices.

Image 1 Sierra Leone field work- Ibrahim Moseray (on my left) helped me (in the middle) translate stories with fair trade cacao farmers about money lending practices in rural Sierra Leone.

Almost all farmers took seasonal loans from moneylenders because there was no other way to survive during the period that people called the hungry season. Many people further down the supply-chain complained about the high interest rates, but they still borrowed money or rice. I met some buyers that were from the community and very passionate about making social improvements through their involvement in the food supply chain. Several ideas stayed with me from observing the rural areas in Sierra Leone. First, all people in rural areas owed someone something either money or services. At first, it seemed absurd to me that all people were in debt, but I came to also understand it as a form of interdependence in areas that lacked outside resources for development. Cash is the one thing everyone in the rural areas needed. People made short-term deals for cash in exchange for credit. Many people owe each other credit or in-kind favors. Second, unexpected things happened all the time and agreements would change but people were flexible and accepted that they cannot control certain things. The biggest thing in the rural areas was that people have to share. It was not OK to get rich on

your own. As I found out later, I would use many of the things I observed to build relationships with rural people in Waianae through the Kahumana Farm Hub (KFH).

It was also while I was in those rural areas that some books and ideas that I had brought with me started making more sense in regards to rural and sustainable development. These include the writing of Fritz Schumacher (1973) "Small is Beautiful: A Study of Economics as if People Mattered," ecological economist Herman Daly (1996) "Beyond Growth: The Economics of Sustainable Development" and particularly his essay "Economics in a Full World" (Daly, 2005). Daly (2005) argued that current economic thinking and development models were outdated because they originated in a time when the economy was small compared to the ecology that supports it. But many things changed since WWII, Daly argued, exponential growth exhausted natural resources. During this time, reports showed that more than 50% of the world population lived in cities or urban areas caused by decades of rural-urban migrations. Daly argued that we now need a different type of economic development model based on the ideas of sustainable development. Daly's writing influenced me especially when he sent me all his essays in a personal email upon my request. Daly would also write about another topic that fascinated me: an understanding of means, ends, human satisfaction and moral character development (Daly, 2005). I had already enjoyed this discussion from authors such as Thoreau (1971) in "Walden" and Plato's "The Republic."

The idea is that good material conditions have taken the place of an *ultimate goal* in people's lives; however, Daly recognized that material well-being as an *intermediate end* toward a greater *ultimate end* of spiritual and moral growth. The latter, he said, no matter how complicated it is to understand, we cannot ignore it as a final end. In the spirit of others such as Plato and Thoreau, Daly (2005) said that just because something is difficult to study, referring the philosophical discussion on ultimate ends which was not considered a common concept of mainstream economics at the time, does not mean that people should not try- just the opposite. Martin Luther King (1968) talked about a similar topic in his speech "the Drum Major Instinct" and warned people that the Drum Major Instinct, which refers to mass consumption, has gone so far that it has become detrimental to America. I was influenced by thoughts that question the strong focus on growth and increased consumption in our modern society, but I was also influenced by ideas of an alternative form of development theory presented by Schumacher (1973).

Like Daly, Schumacher was very critical of materialism and, seemed somewhat concerned that low-income countries would follow the same development path as western countries. Schumacher said that in all low-income countries there are now large cities that have a similar type of development and access to resources that compare to high-income countries. In Sierra Leone, like many other countries in Africa, 50% of the population had moved to urban areas. Schumacher further said that rural areas tend to be cash-poor but rich in natural resources. Moreover, rural unemployment produces mass migration into cities creating urban unemployment. Because of these conditions, Schumacher urges development of rural areas to bring health to economic life outside the big cities, in the small towns and villages that still contain 80-90 percent of the total population. I adopted this question to my life and journeyed to the rural villages in Salone.

The villages had little material wealth or "*Cargo*" as Jared Diamond (2011) called it*,* but they seem to have an abundance of shared community, spirituality, and happiness. They were also very resourceful and creative. I would later have the same experience in rural Waianae on Oahu. The happiness aspect was not the focus of my study but I felt it. In my studies, I started focusing on rural development. Our work at FAO was to connect people in agriculture with markets because it could lead to an improvement of their situation. We worked through education, workshops, and developing value-added and more shelf-stable products for rural farmers.

My friend in the FAO office was Prince Kamara. He worked for the Ministry of Agriculture, Forestry and Food Security (MAFFS) and we worked closely together on a sustainability report. Prince noticed that I enjoyed the rural villages more than high-end places in Freetown where all the expatriates hung out. He brought me to his village for New Year 2009. We had fun together, celebrating with his family, playing an annual soccer tournament that I participated in with nearby villages. I thought I was a good soccer player, but not compared to them. Upon arrival, people greeted me with songs, dancing, and food. During this time, I met many people who wanted to talk to me because they had heard about me. They called me "*white man*." I just laughed and thought about my experience of growing up in Sweden where people had called me the opposite. The people who wanted to talk to me were usually village members who used to live in Freetown, England, Canada, or the U.S. and had chosen to come back home. I had a chance to sit and talk with several of them who had experienced displacement-

Image 2 Sierra Leone playing soccer- Playing soccer with children in a rural village in Sierra Leone while on New Year's holiday vacation from the Freetown office.

whether voluntary or forced. The village Chief was one of them. We sat down on a two brand-new, clean skin leather armchairs with plastic wrapped around them outside of his Chief residence.

The Chief told me his story. He had to flee the country during the Civil War in Salone (1991-2002). He lived in Canada for a few years where he worked at McDonald's and drove a taxi car. We both laughed at the irony of changing roles from an influential Chief of a village with 50,000 people to working a minimum wage job in Canada. He said he was missing his village. I said if you talk to people around the world and you tell them you lived in Canada, one of the richest countries in the world, and chose to move back to your village in Salone, which was considered the poorest country in the World in 2008, how do they respond to you? He said the people form the village understand. Many of them were in other places with successful jobs, but they came back here because they say they missed home. I was very fascinated by his decision to come home, deep down I knew why he made that decision. I had myself grown up in a country that was not my country, where everybody looked different than I did, had

a different religion, wore different clothes, ate different food, and had a different set of values focused on individualism where my values were more communal.

Image 3 Prince Kamara- Celebrating New Year weekend with my friend and FAO colleague Prince Kamara 2008/2009.

The first six years of my life, I grew up in a turbulent war zone on the Iraqi side of the Iran-Iraq border. I grew up in a town called Ahsraf- an hour north of Bagdad in the Iraqi desert. Ashraf housed a group of several thousand Iranian refugees that had fled during the revolution and struck a deal with Saddam Hussein and received a safe haven in Iraq. Ashraf was not just a temporary safe haven for any Iranian refugee that was trying to escape the regime of the Ayatollahs, the city was specifically allocated to the People's Mujahedin of Iran or the Mojahedin- E- Khalq (MEK). The MEK had ironically helped the Ayatollahs' to grab power in 1979; after only couple years in power, however, the new Iranian regime forced any other political or religious affiliations out of the country or imprisoned and tortured them domestically.

Such was the story of my family. If they had not already risked their lives during armed struggles in the revolution or died as martyrs in the years after the revolution, they were willing to fulfill their lives destiny and fight the evil regime of the Ayatollahs to free Iran and install democracy. This was their life

mission. My family and everybody that I grew up around were ready to offer their own life for what they believed in. The plan for my life and me was the same to grow up healthy and well educated, and then become a soldier and then a martyr.

Instead of growing up in Ashraf my life took a quick turn. The first gulf war had just started and Ashraf was not a safe place to be. In my case, there was no choice- it was escape or die. At least that is the explanation that people gave for our displacement. People who later heard my story always told me that I was lucky for having grown up in Sweden, a country at peace, and I could understand why they thought so. But at the same time, people from Sweden were not used to Iranian culture which was much less about the individual and more focused more on family and extended family. Growing up without my home culture made me feel like something was missing. I think the Chief had the same experience in Canada. I felt mote rooted in rural areas with farmers and Indigenous cultures. For me, the notion of social justice and human rights had to do with building conditions for people in rural areas to reverse involuntary displacement and enjoy life at home close to their history and cultural roots.

One of my many interests was listening to stories of people who been displaced from their home culture and started a journey of adaptation to a new life. I enjoyed listening to stories of people that had experienced and overcome hardship because they would often inspire me. Because of my experience, I had a deep understanding of people who had been uprooted, experienced displacement and cultural alienation. While rural-urban migration is a major phenomenon that is largely out of my hands, I decided that my work was going to involve making material life better in rural villages to allow people the material conditions to build a life close to home if that was their choice. I realized that my ideas of family and home are far from reality. Families are broken up all the time and people go to distant places to work and improve their material lives. Nonetheless, I had a passion for food, food products and teaching the process. I started thinking of my work as assisting people with the means— the education and resources that they need to create economic development at home. My meeting with the rural Chief in Prince's village was a game-changer for me and an experience that guided my future research.

Influences from the PhD program in planning. In 2010, I finished a Master of Arts in Global Leadership and Sustainable Development at Hawaii Pacific University (HPU). I remember sending a memo to our Program Chair Arthur Whatley about my experience with rural development in Sierra Leone and a list of action items to improve peoples' lives. These actions included service learning

exchange programs, agricultural business plan writing, financial literacy programs, utilizing small technology to do value-added product development, processing and packaging food products, establishing transportation and road improvement programs to assist farmers. HPU's Vice-President for Enrollment Scott Stensrud created a poster of my experience and promoted it to other prospective students at HPU. I graduated with distinction. During the last year at HPU, inspired by farmers I had worked with in Sierra Leone, I started an ISO or student-led association that would focus on organic farming as a form of activism. At the end of the first year of farming, we were selling organic vegetables to the campus café as well as through a CSA program for HPU faculty.

In Fall 2010, I was accepted to the PhD program at the Department of Urban and Regional Planning's (DURP) at the University of Hawaii at Manoa. The first time I visited the department large letters on the front window read: "Department of Urban and Regional Planning." I remember feeling a bit out of place and thinking to myself, at that end of my time here I hope it would include the word "rural." I soon found out that regional encompasses rural; however, I noticed a gap between planning in low-income countries and planning for the low-income communities in the U.S.. Some early works by planners showed that food planning was not a concept associated with urban life but rather rural issue that in the U.S. serviced by agricultural extension agents (Pothukuchi and Kaufmann, 2000).

Beyond the status of the food planning discourse, when I first joined DURP, I felt a connection with several core values in planning including the American Planning Associations code of ethics that guide planners to pursue public interest, bottom-up planning, and the idea of empowering communities through cooperative work. Planners have a Code of Ethics and Professional Conduct that spells out ethical and moral reasons why many of us chose to become planners (AICP, 2016). I found that the principles of civil service for the sake of advancing public interest was in line with my motivations to do community led research. Furthermore, I largely adhere to overarching activist ideas by planners Fainstein (2010), Friedmann (1987), Forester (1988) and other hyper-realistic, well-intended planners who ask us to "muddle though" and continue to work for justice, sustainability, and empowerment in our communities in the face of major challenges and complexities.

The Code of Conduct clarifies and validates that we as planners first work for the public to improve communities and lives (AICP, 2016). Increasing public interest and concerns for food security, climate

change and health has effectively brought planners "back" to the "food table" with a focus to improve and enhance local and community food systems (Campbell, 2004). In the food planning discourse, it was exciting that some people had identified that rural planning skills should be part of the food planning equation (Pothukuchi and Kaufman 1999, 2000). While planners in the U.S. were absent from food planning from post WWII to 2000, Vitiello and Brinkley (2014) showed a "hidden" history and evidence that planners were involved with social and fair marketing practices and built associations for minority groups before the 1950s. Now, two decades after Pothukuchi and Kaufman (1999) , planners have carved out a place in working with local food systems, especially within the food supply chain and value chain (Pothukuchi, 2005) on issues such as resolving food insecurity. I noticed, however, that planners have been slow to integrate local food producers and their associations in the discussion. All that I read about food planning a decade ago when I started this project excited me and made me realize that I could help people in rural areas who made a living from their involvement in the agricultural supply and value-chains; however, I did notice that planners' were slow to address rural farmers and communities and more familiar with addressing urban populations. The University of Wisconsin-Madison is an exception.

When I initiated the doctoral program at DURP I also got involved with the existing student-led organic farm called Sustainable Organic Farm Training (SOFT). At UH we had access to more land than at HPU; also, we had access to expertise from the professors at the College of Tropical Agriculture and Human Resources (CTAHR) including Dr. Ted Radovich, H.C. "Skip" Bittenbender, Dr. Douglas Vincent, Dr. Loren Gautz and Dr. Chin Lee. We organized workdays twice per week, a weekly farmers-market on campus, and we got to experiment with various value-added processes including packaging dried herbs, processing the kava roots and making the drink, shelling macadamia nuts. I was the Principal Investigator for a $10k grant awarded toward student farm expansion by the university's Graduate Student Association that allowed Gabe Sachter-Smith and myself to receive stipends for the work we did.

The student-led initiative also brought up a discussion about campus food sustainability for the University of Hawaii system. I collaborated with Dr. Luciano Minerbi (my Ph.D. adviser at DURP) and Dr. Benny Ron (CTAHR faculty) to write a plan for UH system food sustainability funded by Vice Chancellor of Academic Affairs in 2012. Based on this project Dr. Minerbi and I submitted a proposal for Community Food Resiliency Project for UH System campuses requesting roughly $150,000 from UH Manoa Sea Grant Coastal Storm program. While this project made it to the final cut with lots of support from many

departments of the UH System, it was declined in the final round because one reviewer deemed the program more suitable for a land grant program. I worked for Dr. Benny Ron one more semester as a graduate assistant with UH Aquaculture Initiative-an online aquaculture learning resource for Pacific Islanders.

I have also been involved with a few other food-related projects in Hawaii before I moved to Waianae. My network of friends started hiring me to construct organic gardens in their backyards (about ten in total). After that, I connected with Fran Butera of Foodscapes Hawaii. I joined her team and from 2012-2015, we established and maintained some thirty organic gardens for residential people island-wide. Jesse Hsu and I, both PhD candidates at DURP, were hired to consult for a rooftop garden project at a restaurant in Chinatown, Honolulu. By the time the plans were finished, something unexpected happened, and the owner had to move to the U.S. mainland.

Image 4 Foodscapes Hawaii- For a number of years I worked with Fran Butera at Foodscapes Hawaii constructing and maintaining edible gardens in people's backyards. In this photo Derek and I are showing off a newly constructed garden in Manoa, Oahu.

Preliminary Studies and Farm Immersion. In December 2012, Dr. Mary Mostafanezhad and I initiated interviews with eleven small-scale organic farmers on the islands of Hawaii and Oahu. We studied local agriculture in Hawaii, and we wanted to understand more about the perspectives of farmers that host agricultural volunteers. In January 2013, during these interviews, I met the new farm manager at Kahumana Organic Farm, Christian Zuckerman, whose parents I already knew from prior visits to the farm. I asked him if I could become part of the crew and ended up living and farming with

Kahumana for one year. I worked with vegetable production, processing, CSA operation, the farm café, and I helped make brochures for the farm tour program. While living at Kahumana, I was teaching a graduate course at HPU called "Environmental History of the Modern World." The U.S. agricultural and land-use history was a central part of that course. At the end of my stay at Kahumana, I had the opportunity of combining two of my passions: people who have developmental or mental disabilities and farming. Before coming to the U.S., I had worked as a personal assistant in Sweden and people said I had a natural talent for it. At Kahumana, I worked part-time with an individual who had schizophrenia while, at the same time, I started helping out our neighbors Sabrina and Monique Vanderstroom of Naked Cow Dairy twice a week with cheese-making. I did not know anything about cheese at the time but Sabrina taught me. The more I learned about the operation and their challenges, the better was my ability to serving farmers. A salary helped me to cover tuition expenses, but I was not motivated by making money but rather to witness the day-to-day life of a small-scale farm-to-table dairy and creamery operation.

Laboring

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Saleh Azizi, 29, is an artisan cheese maker at Naked Cow Dairy in Waianae. He is one of two people in his profession on Oahu and has been working at it for just less than a year. "For us as the new generation, I think it's important that we learn the activities that go into making food," he said. "It's part of a decentralization process where we take the power over our communities." Azizi is working toward a Ph.D. in urban planning, focusing on small-farm viability in Hawaii. He was been working with Hawaii farms since 2006. As an ethnic Iranian who grew up in Sweden as a refugee from the first Gulf War, he has a global perspective on food production, community planning and Hawaii's place in the world.

Image 5 Laboring- For two years I learned how to make cheese and work in a small dairy and creamery in Waianae with Naked Cow Dairy. This picture was in the Honolulu Star Advertiser 8/3/2014.

Image 6 Ocean Breeze- As a local artisan creamery we were constantly challenged to come up with new products that folks can't normally find in the grocery stores. I thought why not make a brie-style cheese with squid-ink colored milk and a white bloomy rind- as seen on this picture. The name is almost more genius than the cheese. The owner liked the idea and she said: "let's call it ocean breeze." It became popular and an artist from the US mainland made this portrait of it.

In 2013, as cheese-making required more of my attention, I started working full-time as cheese- maker. At the time I was able to make some twenty different types of cheese but also butter, buttermilk, yogurt, dressings, and entirely new types of cheeses specific to Hawaii. But in a small business, you have to be able to do everything. I helped the owners with grant writing, internal improvements, record keeping, food safety licensing procedures and maintenance including state and federal food safety compliance for small-scale farm-to-table dairy production, website and social media maintenance, tours and cheese and wine events, deliveries, and attracting new local chefs and customers. I was also a vendor at the local farmers' market mainly the Pearl Ridge farmers market but also Waianae, Kailua, and in Kakaako selling cheese and butter every week for 2 years. I also taught some cheese-making classes.

Starting a community oriented food hub. Two years later, in 2015, I came back to work at Kahumana Organic Farms with skills and vocational development focusing the training on organic farming and food making. Part of my job was to teach cooking skills in a farm-to-table setting with the special needs population. I also did regular farm work such as washing vegetables, collecting and washing eggs, harvesting and packaging, etc. At Kahumana I also worked part-time as a farm-to-table chef and some days teaching cooking and other days as a cook for the community that lives on the farm.

Mostly I cooked for yoga retreat groups that would stay at our farm for a month long retreat. In August 2016, I became a Hawaii Farmers United Union (HFUU) member and a few months later, we started the HFUU Waianae Chapter where I still serve as the Vice President. Our commitment was to provide a forum for our community to meet, share ideas, and create new relationships and partnerships around sustainable farming with a geographical focus on Waianae.

I reference my past to show how my background has influenced my activism. I come from a place where people, and especially my family, die for what they believe in. They killed many of my family members; the ones that are still alive are caught in a perpetual circle of vengeance and death. Without any choice, I was moved to Sweden and, at least, my older brother was by my side to protect me. He had become the person responsible for me when he was only nine years old. In turn, he did not have a normal childhood. Two years and ten families later, we were placed with a foster family in Sweden. They loved us and gave us everything they could. But we had to learn a new language, a new culture, new foods, and new definitions of rights and wrong. People in Sweden looked down on people like us thinking that we were from a place of warfare, backwardness, and terrorism. Educated doctors and lawyers who came from Middle East to Sweden as refugees ended up taking jobs as taxi drivers and fast-food vendors. My minority experience as a refugee in Sweden allowed me to side with all people who at some point experienced similar pain. Honestly, I believe that God gives us the gift of pain so that we may extend beyond our isolation and connect with others. But I was also really good at being "a Swede." It was a game for me. I learned all of the superficial behaviors because those were the tools of being successful in that setting.

Because I have experienced deeply meaningful and traumatic events, I have come to listen to that, in other stories, that is below the surface. I side with the ones in society who feel burdened, the underdogs, oppressed, and victimized. I identify with the notion of the "real friend" or doost in Farsi as I see my main skill as someone who bears witness to complex social situations through people's stories. My first action is not to intervene but to listen (since I study policy, the notion of the intervention is often considered a central role of the policy makers). Planning theory of public representation and facilitation suited me because it uses listening as a tool for grassroots representation. In my work these days, I hope that I can make meaningful policy recommendations based on original stories of the people that have endured the most suffering.

Image 7 My Swedish family- In Sweden my brother and I were fortunate to end up in a family that was loving and caring. In this photo from left: me, Christina Jakobsson, Hanif Azizi (brother), and Anders Jakobsson.

Before I started working with the Kahumana Farm Hub (KFH) in February 2017, and when the KFH was still just a proposal, I was curious about how the food hub concept could help local growers in Waianae. I started raising the point of food hubs at our HFUU Waianae Chapter meetings. Christian Zuckerman and Dr. Christy Mello, Associate Professor of Anthropology at University of Hawaii at West Oahu (UHWO), were both members of our chapter board. Christy and I had agreed to serve on the education committee of HFUU Waianae Chapter to assist with creating project and program ideas that could benefit multiple growers in our region.

But before that, in December 2016, I had been approached by Hawaii Farmers Union Foundation (HFUF) to assist with grant writing for the 2017 Grants in Aid (GIA) program by the State of Hawaii Legislature. I ended up writing a project for the foundation called “Increasing local food sales in Hawaii by strengthening regional aggregation and distribution centers (food hubs) in Waimanalo and Waianae. “ It was submitted in January and on April 24 I received the good news through many joyous phone calls with congratulations. I still remember the feeling well. It was as if the many years of investing in education had finally paid off. The resources from the grant went toward a refrigerated truck and a coordinator (myself). I started seeing the next stage of my activism as a community-oriented grant writer. In 2017, I submitted other grants mentioned in Chapter 2 too including LFPP, USDA, NIFA AFRI, ANA, and CFPCGP. After that, Christy and I started writing to connect UHWO and Kahumana further. We worked well as a team, we have different sets of skills in a way that complements joint projects. People like Christy, Christian, and leadership of HFUU including Vincent Mina and David Case are dear to my heart because they have helped me as a person to feel like I can be of support in our farm communities.

Image 8 & 9 Hawaii Farmers Union United: Strengthening Oahu's Food Hubs- I remember these images well, February 23, 2017 this image is from a meeting with the State legislature representatives staff from Representative Tulsi Gabbard and Representative Cedric Gates' offices with Senate President Ronald Kouchi in Waianae. They came to see us (HFUF) and the team at Hoomau Ke Ola to ask questions about a grants we applied for during the 2017 Grants-in-Aid session. After two additional trips to the legislature we found out that we got the $90k for our project. It was the first time I felt like my education could have good bigger impact in the community

There is a feeling in Waianae that people take care of each other and are willing to help in times of need. Within our community we have people who are very well off and people who are not well off economically. Nevertheless, we are all family and when one family member suffers, we all suffer. I think this is the reason why no matter if you are rich or poor, you share with everyone. Countless times have I heard from people at my workplace, one week after payday, that their accounts are empty and that they cannot go out for lunch. When I ask why their money is out they tell me that they have big families. In Hawaii we often say we live from paycheck to paycheck, but I think in Waianae we live on each other's paychecks. This also shows the interdependence of rural communities.

Cash is the one thing everyone needs. This is very true for Waianae and the first time I saw this was during my work in Waianae. Some farm owners were constantly in debt and paid off little at the time.

This is exactly like my experience working with farmers in cacao producing areas of Sierra Leone. It is also true for the KFH. The first few weeks I paid people with checks, but very few people liked that. Many did not know how to cash a check, they would write it in another person's names who had a State issued ID, and they just would not trust that the check would come through. Then I switched over to a cash system. That is when the farm hub started growing. I used to have a $500 petty cash on a weekly basis. The hub grew quickly when it was dealing with cash. We did not advertise but everyone came. Currently we have a $4,000 petty cash system on a weekly basis and some weeks we still have to replenish more than that. But sometimes we also run out of cash. I have been amazed at how patient people are. I tell them, I am out of cash for 2 days.

That is when something amazing happens. People understand the changing situation and they agree to give me their products and wait for the cash- so in effect they are lending me money. So every now and then it is actually the growers that lend me money in-kind through the produce they bring. I can sell their produce the same day I receive it. It is a really nice favor that most KFH growers do when we are out of cash. For these types of arrangements it is very important to keep records and I help the growers to keep records of all transactions and we go back and check them if when they like. Because of this kind of interdependence we have developed a sense of mutual trust around the Kahumana Farm Hub.

Another situation is that sometimes I am too busy to inspect produce, so they will have another farm worker weigh it and then they bring the weights to me and I pay them cash. In those instances, quite often, a mistake will be made where I ought to have inspected the produce before paying for it. But the growers are very understanding about correcting things later. They might have told me they brought fifty pounds of lemons when in fact they were premature oranges. Growers have been quick to admit their mistake and arrange with me a repayment payment plan. I do not make them pay any more than 50% cause I always tell them 50% of it is my mistake for not inspecting it. But cash is the main engine that makes the KFH spin.

Waianae can be a place of refuge for people in Hawaii who are taking a break from society. That is an idea I have received from many residents and especially KFH growers. There are currently some 50,000 people in Waianae. From their stories I understand that many people in Waianae have been burned by the system and with that I mean discriminated against for being Indigenous Peoples. So folks out here

have a much different understanding of crime and stealing than others. When I spoke to Uncle Shan after he had people stealing from his property. He said: "*no let's not do anything about it, they probably really need the money and in a few days they will come back and apologize and do some yard work for me.*" It is like he has a different view of crime and stealing that is also influenced by his own understanding of Waianae as a healing place for folks that need refuge.

At KFH I have encountered stealing a few times and been amazed with the community's response to it. While I am not happy about stolen fruits and vegetables, I also ask one more question in regards to stealing and that is why does a person steal in the first place. As a community of concerned citizens we should also see stealing as a sign not only that an individual is doing something wrong but a sign that there is something larger problem in society. In my experience people steal because they need their basic needs met but also because they think that the people that they steal from do not care about them. I think of the time when Gigi got his goat stolen and the community helped him find it and brought it back to his farm. We had another incident where a KFH grower was caught stealing on the property of one of the Kahumana staff's auntie. They were both lifetime residents of Waianae.

I was ready to take it to the police but the Kahumana staff and his auntie had a different approach. They told me that there are many people in Waianae who steal because they have an immediate need but they come back later and make up for it. That was also true in this case where the person who was caught stealing ended up becoming a partner with the auntie from whom she had stolen. They set up a new relationship with one another where they started working together. The auntie who was old and unable to collect her fruits partnered with the KFH grower and they shared the proceeds. The Aloha (love, compassion, caring) is so strong in Waianae that I have seen people gift their fruits to KFH growers who are in need almost like a social security system controlled by the gift economy of Indigenous Hawaiian Peoples and of rural areas in Hawaii. It is a beautiful system to observe and be part of.

That is why I feel that touching land in Hawaii has been a healing experience for me. Throughout the project I felt a need to "give back" to the land and to frame my own work in a way that can be appreciated from Hawaiian values and its ancestors' point of view. Stories of people rooted in place are like medicine to my heart because of my own experience of displacement and being uprooted. While the focus of this dissertation has been to inform planners and policy of small-scale farm realities, several

times I wanted to put it all down and study the culture of Aloha because of how it amazes and governs communities from within, fuels the motivation of people in Hawaii, and perpetuates wisdom and guidance. That could be the next steps of my life.

Grant writing as activism. Grant writing for me is a form of activism. It has to do with understanding the government's priorities and matching them with the citizen-led (bottom-up) movement's ability to do the government-requested tasks. There are many things that the government and other funding organizations such as Kamehameha Schools want to do but cannot do because of their lack of opportunities and expertise. Therefore, there is a gap between government programs and the bottom-up project's ability to meet them. As a grant writer, that gap is one of the most important things to understand in order to make a lasting impact in the community. The nice thing is that when collaborations happen between grant writers, bottom-up movements, non-profits and the academics, we can collectively design programs that can bring about social change but also help with evaluation of performance indicators, and milestones. Therefore, the grant writer becomes the grant administrator and, if we do an excellent job with the administration, the investor is likely to continue the program until it reaches financial sustainability. However, and ultimately, as an educator my goal is to work with people like Christian from Kahumana and hand-over the whole process of grant writing, administration and performance indicators so he does not need to rely on folks like myself.

In January of 2017, Kahumana Farms received $39,522.10 for a project called "The Kahumana Farm Hub (KFH), creating a cohesive farming community for West Oahu specialty crop farmers." The project duration was one year and they hired me as the farm hub manager. In addition to being the KFH manager I was permitted to collect data for the purposes of this dissertation. The purpose of the hub was to create a nearby resource for the community of small-scale farmers and backyard growers who grow food in Waianae. The hub facilitated marketing, sale and delivery for growers. The hub then prevents growers to make the commute to urban Honolulu and allows them to spend more time at home and on their farms. Kahumana through its extensive network of buyers facilitated the sale and paid growers 70 cents of each dollar in revenue. Since its start, the farm hub had much more sales than originally expected from the grant proposal. The results was above expectation and that can be attributed to the fact the project is situated in a community that has a long history of mutual sharing and living with aloha or love, compassion, and caring. In fact, without these elements, there would be no

success. While farmers and backyard growers make up the hub's core members, it also encourages elders and people who work full-time away from home to gift the food grown in their backyards in exchange for yard cleaning services and other arrangements.

The first year KFH made $96,325 in payment to its growers and brought about 74,300 pounds of food to the market place. The majority of food sold included fruits such as mangoes, avocados, oranges, tangerines, lemons, pumelo, breadfruit, and other fruits that grow in Waianae. KFH currently has 100 Ohana members and growing. Becoming a member is easy people can sing up on the spot. In the first year, over 90% of members were Socially Disadvantaged and Beginning farmers (USDA description). In addition, many of the socially disadvantaged farmers received SNAP benefits so we knew that the revenue was going to people who also suffered from food insecurity.

Imi Naauao, Maawe Pono and KFH. In August 2017, I was hired part-time as a Graduate Research Assistant at UHWO while I was still serving as the KFH manager. The research project included the farm hub and several other programs in Waianae such as MAO Organic Farms, KUPU, Kaala Farms, and the UHWO Community Food Systems Program. This project was called *Imi Naauao: Hawaiian Knowing and Wellbeing Study.* The group consisted of people that examined the revitalization of the Indigenous Hawaiian practices by identifying methods and ideas for improving well-being through all facets of food security and Aloha Aina practice. The project was funded by Kamehameha Schools. Among the team were well-known Indigenous Hawaiian representatives including Dr. Ku Kahakalau, Dr. Manulani Meyer, Kukui Maunakea-Forth from MAO Farms, and Eric Enos from Kaala Farms. With the Imi

Image 10 Kahumana Farm Hub- In 2017 I saw hired to start a community oriented farm hub that facilitates the marketing and sale on behalf of small farmers and backyards growers in Waianae, Oahu. In this photo one of the hub growers show an exchange worker from Japan how to husk and enjoy a young local coconut. Photo Credit: Minami

Naauao group I found myself listening to stories from Kukui from MAO and Uncle Eric from Kaala sharing why they do what they do. It made me think about my own introduction to Waianae.

A few years before I started working at Kahumana I was introduced to a few people in Waianae. Because for a short period after completing the bachelor's degree I thought, I was ready to work in the rural communities in Hawaii. It was the 7th of March 2010 that I first visited Waianae. My friend Greg Stock from Waldorf high school in Honolulu been bringing student groups out there for years. I knew him through my some acquaintances in Kailua. For good reasons, they thought that Greg and I would get along, and we still do. He took me to see three people that day: Gary at MAO farms, uncle Gigi at Hoa Aina o Makaha, and Soriya Kumar at Kahumana Farms. I enjoyed the visit, but I also realized that my hope of finding opportunity in agriculture was premature.

Gary, myself, and Greg sat on a small wooden bench outside a church, and Gary shared his vision for MAO Farms. I met Derick in the fields and he looked me deep in the eyes and asked me: "*what are you doing here?*" I thought a lot about that question too. I appreciated my short meeting with both Derick and Gary because it was clear that their actions around sustainable community agriculture were motivated by love and making the world a better place. Both of them were people from another place that had come to Hawaii to work with social justice through agriculture.

Father Gigi stopped me at the gate to his farm because Greg had told him that I studied sustainability at HPU. Gigi wanted to me spell out an acceptable definition of sustainability before he let me on to the property. I said that sustainability is a notion that asks each of one of us to reconnect with our cultural roots or something similar. He said he liked it. I passed the test and still today, he says I was lucky he let me in.

I didn't move to Waianae in 2010, instead, I started studies toward a doctoral degree at UH Manoa. Fast forward to today, I have felt very humbled to be invited to sit with the Imi Naauao group seven years later. Everyone was very welcoming to me, they treated me like family, and I started learning more about the connections between Indigenous Hawaiian culture, my own Indigenous Iranian culture, and understanding the Indigenous methodology of Maawe Pono or treading on the trail of honor and responsibility, presented by Dr. Kahakalau. The methodology did not steer me away from my prior focus.

Instead, it deepened my notion of community involvement and my role as a researcher. This group helped me understand the many cultural strengths of the Hawaiian community that I did not know about before. Imi Naauao allowed me to experience a deeper form of the community participation approach when I work with people in Waianae. In February 2019 we presented the findings of the Imi Naauao project at UHWO.

Partly because of the Imi Naauao and Maawe Pono influences, KFH created a new form of community engagement resulting in new relationships and friendships. It has been successfully shown that the farm that hosts it is there to support the community of Waianae. The relationships and friendships beyond just extending an income making opportunity and more jobs, sustain better community reputation because we treat people with dignity and respect. Now KFH growers and the Kahumana community are included in the same circle of care where before people did not know about each other. It has given Kahumana an opportunity to show the community that we are there for the community and not to take from the community but instead "giving back" to the community.

The community consist of people who are Indigenous Hawaiian either by blood or culturally. The strong leaders in the UHWO project influenced my work with KFH including Dr. Manulani Meyer, Dr. Ku Kahakalau, and Kukui Maunakea-Forth. Academics foster intellectual development but often neglect spirituality and compassion. Community oriented work asks us as academics to meet the community where it is at, to work on finding solutions to the things the community deems important. Imi Naauao positioned my academic work within a spiritual framework of compassion, of service to the community through Hawaiian protocol chants, and wisdoms sayings. The final step of Maawae Pono is based on the concept of kukulu kumuhana or the pooling of strengths – physical, emotional, intellectual, spiritual – and it allows a unique continuation of the work. Because Maawe Pono teaches us that if our work is Pono or good- when we do work for the community and with the community and proposed solutions are validated by the community- then the work can gain collective support from our community because people value it.

Local, state, and national grassroots farm policy. In 2018 and 2019 I started focusing more on grassroots farm policy based on stories shared by farmers. I had then spent many years living and working with small-scale farmers in Hawaii. I had become a farmer myself. Through HFUU I got to know

Image 11 National Farmers Union 2019 Policy Committee: Washington DC. National Farmers Union's 2019 Policy Committee is in Washington, D.C., this week began the organization's policy-setting process. Over the course of the week, the committee met with congressional staff members and industry experts to discuss important agricultural issues. Additionally, they began editing NFU's Policy Book to reflect current concerns and priorities. These changes will be presented to delegates at NFU's Convention in March, who will then have the opportunity to assess, approve, and adopt recommendations.

farmers from all Counties of Hawaii. When I was appointed the Policy Committee Chair for the HFUU State Board and my first task was to conduct a membership survey. The survey went well and informed several policy and legislative initiatives in 2018 and 2019. The HFUU President was happy with my conduct and nominated me to be part of 2019 Policy Committee of the National Farmers Union (NFU). I documented my involvement and reflections as the HFUU Policy Committee Chair and as members of 2019 NFU policy committee including the experience of representing Hawaii's farmers during a trip to Washington D.C. and in the NFU 2019 National Convention. This section is continued in Chapter 8.

Conclusion of Personal Journey

Throughout this dissertation project I found it helpful to write about my own life and reflect on why I think the way I do, and what experiences influenced me to do research in rural and farming communities. Some people call this process authoethnography, which refers to a form of qualitative research in which an author uses self-reflection and writing to explore anecdotal and personal experience and connect this autobiographical story to wider cultural, political, and social meanings (Ellis, 2004). For example, my experience of coming to Sweden, adopting different cultural standards, and feeling like people only saw a negative association with my ethnicity often connects to the feeling that Indigenous Hawaiian people experience who have to adapt to the American culture to survive and get ahead when living in their own Indigenous lands. Much like the culture where I came from, Hawaiian people are family oriented. There were several similar connections that unfolded as I reflected on my

motivations for doing research. Authoethnography also helps the reader understand the connection between the researcher's personal experiences and research focus in a way that is helpful in the conversation on validity and the author's personal biases. In conclusion, reflecting on my past to guide current and future work has had a grounding effect and been a therapeutic exercise.

Overview of author's involvement the last 10 years

Year	Duration	Title	Affiliation
2009	6 months	Internship with Agricultural Management, Marketing, and Finance Service (AGSF)	UN Food and Agricultural Organization in Rome, Italy, and Freetown, Sierra Leone
2009	6 months	HPU Student-led organic farm coordinator	Hawaii Pacific University- Hawaii Loa Campus
2010	2 years	UH Manoa Student-led organic farm co-coordinator	University of Hawaii at Manoa Sustainable Organic Farm Training (SOFT) Program
2011	6 months	Graduate Research Assistant	UH System Campus Sustainability Project
2012	6 months	Graduate Research Assistant-	UH Aquaculture Learning Program- education counselor
2012	Sp 2012/ F2012/ Sp 2013	Instructor- Adjunct Faculty *Course: Environmental History of the Modern World*	Hawaii Pacific University: MA of Global Leadership and Sustainable Development
2012	6 months	Urban Farming consultant	*39 Hotel* in Chinatown, Honolulu
2012	ongoing	Doctoral Dissertation focus: grassroots policy with local farmers in Hawaii	UH Manoa; department of Urban and Regional Planning
2012	3 years	Organic Gardening- Foodscaping	Foodscapes Hawaii, Honolulu
2013	1 year	Farm Crew Member	Kahumana Organic Farm & Café, Waianae
2014	2 years	Cheese Maker and Food Safety Coordinator	Naked Cow Dairy, Waianae
2015	1.5 years	Social worker with focus on organic food and agriculture	Kahumana Organic Farm & Café, Kahumana Learning Center, Waianae
2016	current	Vice-President	Hawaii Farmers Union United; Waianae Chapter HFUU
2016	8 months	Chef & Skills Trainer	Kahumana Organic Farm & Café, Kahumana farm-to-table cafe, Waianae
2017	2 years	Farm Hub Manager	Kahumana Organic Farm & Café, Kahumana Farm Hub (KFH)

2017	current	Grant Writer and Administrator	Self-employed
2017	1.5 years	Graduate Research Assistant	University of Hawaii at West Oahu (UHWO)
2018	1 year	Food Hub Coordinator	Hawaii Farmers Union United (HFUU)
2018	current	Policy Committee Chair	Hawaii Farmers Union United (HFUU)
2019	1 year	2019 Policy Committee member	National Farmers Union (NFU)
2019	2019-current	Community Economic Development Coordinator	Kahumana Organic Farm & Café

Table 4.1- Overview of author's involvement the last 10 years

Chapter 5
The Lived Reality of Small-Scale Farmers in Hawaii

To be food secure in Hawaii, farmers got to make money

Source: Richard Ha, Long Story Short Interview, PBS News 12/18/2018

Overview

Chapter 5 presents the findings from data collection of tier 1 and tier 3 of the dissertation and is based on a diverse data set including interviews, survey results, participant observation and focus groups. The Chapter includes rich, descriptive, real stories of small-scale farmers and workers who produce food for local consumption in Hawaii. While interviews make up the central thread of narrative, other sources of data supplement those findings to contrast, compare and triangulate stories from interviews. The first section, alternative farmers in Hawaii, show the contextual findings from farmers background and history including size of farms, description of DTC activities, farmers educational background, farmers experience in work with grants through non-profits and description of the farms' integration with tourism including attracting volunteers, interns and apprentices. Section two analyses findings from surveys and interviews in regards to farmers' social values and motivations for farming. Farmers' responses are assessed through the value lens of alternative agriculture. Responses include insights about organic, sustainable and regenerative agriculture along with other less explored values of farmers who also want to contribute to community building, education of future generations and political change beyond the food sector. Finally, section three, the alternative farmers and organizational lifecycle analysis draws from interviews with farmers visited multiple times over a period. It presents findings on alternative farmers capacity building including many beginning farmers' efforts to scale-up production, specialize and invest in their operation. The organizational lifecycle model can reveal a more complete understanding and useful insights to how alternative farmers' operations change over time at various stages of development and the necessary policy solutions to scale-up local food production.

Alternative Farmers in Hawaii

Alternative Farmers and Farm Size. This section illustrates comments from small-scale farmers that describe their current activities, what they grow, farm size, and what it feels like to run a farm operation. In addition, this section includes descriptions of different farm models and the common challenges. Chapter 3 table 3.1 shows information from nineteen of the farmers that participated in interviews. Farmers had 3.8 acres in production on average. The majority of farmers had extra land that was not in production. The median farm size was 3 acres in production. The smallest farm had less than ½ acre in production and the largest farmer had ten acres in production. The average acreage for the HFUU survey show similar results. In the survey, 90 members responded that they are currently farming on 353.78 acres, on average, HFUU members farm on 3.93 acres. In 2017, 4,868 (66%) of 7,328 farms in Hawaii operated on 1 to 9 acres, which was an increase of 456 from 2012 when 4,412 of 7,000 farms (63%) farms operated on 1 to 9 acres (USDA NASS, 2017). A major difference with farms in the U.S. mainland is the size of farmers. The vast majority of farmers in Hawaii (66%) operate on less than ten acres while, in the U.S. mainland, 223,634 of 2,109,303 farmers (10.5%) operate on less than ten acres (USDA NASS, 2012). Thus, per capita, six times as many farmers in Hawaii operate small-scale farms compared to the U.S. mainland. For DTC farmers, 74% of farmers operate on less than ten acres in Hawaii (USDA NASS, 2017).

Comments from farmers corroborate that they operate small-scale farms, even though some are in the process of expanding. Here are some comments from farmers about the size of the farms:

Barbara*: "We figure that we have about 3.5 acres in production [8 acre property]."*
Sarah: *"It is 5 acres probably about 2 acres planted."*
Chester*: "The farm is 5 acres, we have only developed 3-4 [at the time of the interview]"*

While farms in Hawaii tend to be smaller than in the U.S. mainland, farm size is usually measured in revenue per year. According to USDA's national agricultural library, small-scale farms are defined as farms with less than $250,000 gross receipts annually, on which day-to-day labor and management are provided by the farmer or the farm family that owns the production or owns, or leases, the productive assets. In 2017, about 95% of all Hawaii's farmers earned less than $250,000 per year (USDA NASS,

2017). From the interviews, the average annual farm income was $134,000 which is significantly more than the average direct sale farmer annual income in Hawaii's Census of Agriculture. The median annual revenue was $48k and the largest reported at the times of the interviews were $360k. The total revenue of the twelve farmers that submitted numbers from Hawaii was approximately $1.40m in local sales- about 2% of $84.4m local sales in Hawaii at the time (USDA, 2016a). From the HFUU survey, forty-five farmers reported an average $89,465 in revenue annually. In 2017, in comparison, only 5% of all DTC farmers made an annual income over $100,000 (USDA NASS, 2017). Thus, the farmers in this study often represent the top 5% of revenue generating DTC farmers in Hawaii. As stated in the methods, participating farmers were selected based on operating successful direct to consumer farms by various indicators including income. As stated in Chapter 1, average DTC sales in Hawaii through farmers' markets, CSA, and farm stands increased between 2012 and 2017 from $8,229 in 2012 to $17,296 in 2017 (USDA NASS, 2012; 2017). Total sales for the same category as a whole increased from approximately 13 million in 2012 to 27 million in 2017 (USDA NASS, 2012, 2017).

Farmers also attest to the importance of off-farm income despite making a higher average income than most farmers in Hawaii. Those that took the HFUU survey had these responses to the following survey questions:

10. I want to farm and make all my income from farming (*n*=110)

Strongly Disagree (SD) 10%, Disagree (D) 21%, Neutral (N) 24%, Agree (A) 20%, Strongly Agree (SA) 24%

11. Non-farm income is crucial for me to maintain my involvement in farming (*n*=102)

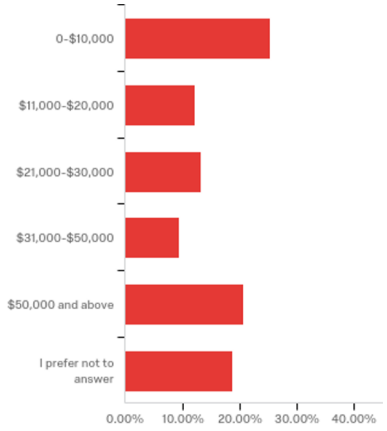
SD 7% D 7% N 10% A 40% SA 36%

While 44% of HFUU members agree or strongly agree that they want to make all their income from farming 40% of the membership disagree or strongly disagree to make all their income should be made from farming. Nonetheless, 76% of HFUU members agree or strongly agree that non-farm income is crucial for them to continue farming. Answers in regards to the importance of off-farm income corroborates research from both the U.S. mainland and Hawaii that suggest off-farm income is crucial to preserve the farm (USDA, 2013; Bittenbender, 1993).

In the HFUU survey, people were asked how much money they gross per year followed by how much of their salary was made on the farm. Figure 5.1 shows the responses to the next survey question about off-farm income.

Survey questions:

8. How much do you gross per year? (*n*=106, CI=9)



9. How much is made on the farm? (*n*=97, CI=9)

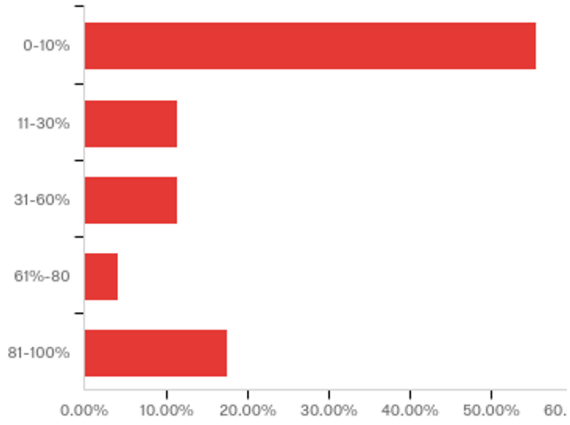


Figure 5.1- Income from farming

Findings show that approximately 66% of HFUU members make less than 30% of their income from their farm while 16% of them make 30% to 80% of their total income from their farm and approximately 18% of HFUU members make 80% to 100% of their income from farming.

Alternative Farmers and Overview of Farm Products and Markets. The next section shows the type of farming that alternative farmers practice. In the HFUU survey, people were asked what do you farm? (n=92). A word cloud shows the responses. HFUU members engage in a variety of farming including production of fruits, vegetables, greens, herbs, livestock and poultry.

Figure 5.2- Word Cloud : What do you farm?

From the interviews, most farmers reported that they grow a mixture of vegetables, leafy greens and fruits. Others raise chickens usually for the eggs but also for meat. Some farmers have small-scale dairy and creamery operations with cows, goat, and sheep. Here are some examples from farmers Abraham and Richard in regards to what they grow.

Abraham: "*We grow greens, Kale, a lot of leafy greens, so you know we are doing lettuces we do green beans we are doing bananas, papayas, we have done a little bit of sweet potato, we have hens that we are getting eggs and we have done some chickens for meat so we are experimenting with that chicken to see if it is actually cost effective."*

Richard: *"Yea we are diversified farm… I have 3 cows, like milk cows so we have a whole dairy component, we have a couple acres in vegetables and herbs and flowers and then we have banana groves and papaya you know the orchard aspect some citrus and avocado. So and then we have 40 to 50 laying hens which we feed organically, I have a mill in fact I got the mill here so I make all our own food for the hens."*

Farmer Lyndon explains how he grows local organic mushrooms. Lyndon: *"Each cycle is about 10 days after the other cycle so that we have continues harvesting. We produce more than thousands of pounds monthly. It only became that way because it has taken time to build this operation… So we keep it here for 10-12 days, and then we put it in this room. So that way, we have to take the compost out. Once it is all pasteurized, and that's what they are doing right now, they distribute it in the grow boxes and put mushroom mausoleum…yes those are our grow beds."*

Farmers Nicole and Barbara are from Whidbey Island, WA where they operate vertically integrated small-scale diaries and creameries. Barbara had to close her operation while Nicole is still active:

Nicole: *"We are a farm that is milking about 60 sheep per day and getting roughly 25 gallons per day of sheep's milk. That will make roughly 48 pounds of cheese that sell at the farmers market for 32 dollars a pound…the farmers market average 1200 dollars at the good markets. This area is for animal husbandry and milk production, over there is the area of cheese making and safety protocols, then there is the general area of maintenance of the farm and the grounds, and for visitors that come there is the area of*

sales, marketing, and tours on the farm. Right now I am in charge of all these areas together with my son. We share the house with interns that work here."

Barbara: *"Well it would depend on how many I was milking. One year I was milking 32 and we were making cheese every day. I made twenty two different types of cheese. Yeah so I've made a whole lot of cheese. And I bought some cow's milk from a Jersey dairy outside of the island because there was no dairy on the island. There are 2 goat dairies and 1 sheep dairy on this island."*

Farmer Lyndon describes his mushroom growing business:

Lyndon: *"Yeah to sort of streamline the operation and also these machines, these refrigerators, containers, air conditioning is very expensive. And then also they don't come working together. You have to get them, you have to tweak them, and figure it out. And also this agriculture process each tweaking and learning process takes about 3-6 moths. That easily takes about a year to have the whole system working."*

The variety of what the farmers cultivate largely corresponds to findings in the 2012 Agricultural Census (USDA NASS, 2012) for DTC farmers in Hawaii (e.g. see figure 1.5) with half (52%) DTC farms in fruit and tree nut production, a fifth (20%) in vegetable and melon production, and the rest of farms (28%) focused crops such as other crops including sheep, cattle, pig farming, poultry, floriculture, greenhouse production, and aquaculture. While all farmers in this study grow some type of crops, they are often engaged in other simultaneous activities. The survey results show that HFUU members are not only food growers, they perform other vital food systems functions. On average, members are involved two or more overlapping functions of: 1) food production, organic focus; 2) agri-tourism and farm tours; 3) farmer education and training; 4) food processing, marketing, and distribution; or 5) restaurant and hotel operations.

From interviews, over 50% of farmers were certified organic and the common modes of DTC included farmers markets, community supported agriculture, on-farm sales and sales to local stores, restaurants and hotels. Moreover, all farmers in the study were fully committed to direct to consumer sales and sold all their proceeds locally on-farm, in grocery and health food stores, at local farmers market, through

Community Supported Agriculture (CSA) subscriptions and to hotels and restaurants. Most farmers engaged in two to four different direct markets. About 63% of farmers had developed their own value-added products from raw ingredients that they produced on the farm. Another 37% of the farmers had on-farm tourism, which varied from education and recreational tours to bed & breakfast operations and retreats. The results validate one of the findings of Lass et al. (2003) who argued that for small-scale farms CSA operations were just one of several enterprises combined with farmers markets, direct marketing to restaurants and retail stores, roadside stands, tours and on-farm sales with a focus on organic food production.

HFUU survey questions also asked farmers about markets and sales. Figure 5.3 shows where farmers make the most sales? (*n*=72). HFUU members rely mostly on farmer's markets and grocery stores for their sales. Approximately 21% of members make their sales at farmer's markets and the same number of members make most of their sales to stores including retail stores, supermarkets, health food stores and other stores. While direct marketing will have an extended discussion later in this chapter, a comment from Farmer Chester explains why he believes that small-scale farmers have more income opportunities now compared to when he started farming in the 1980s because of direct markets:

Chester: *"The evolution of good farmers markets, CSA's and supporting local restaurants makes farming today much more lucrative than it was when I started farming in the mid 80s. I mean there are now avenues for small, organic farmers to make a living which really didn't exist [when I started]. That was always the biggest challenge was you can't just be an exclusive club for small farmers and rich people who can afford it. The intention was why shouldn't everybody be able to eat organic foods and why shouldn't there be an infrastructure of farmers and traders that are sustainable in a way that everybody makes a living. We have to have organic and sustainable agriculture it has to reach a scale that is proportionate to the market place that it will be in."*

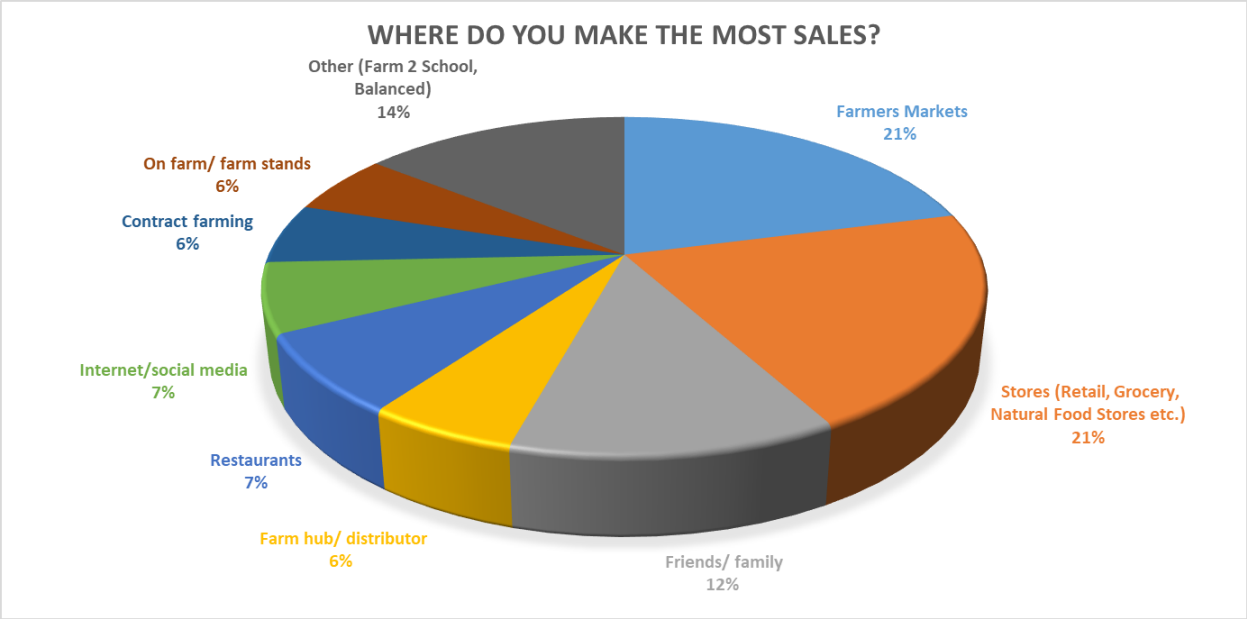


Figure 5.3 Where Do You Make the Most Sales

In the HFUU survey, fifty-eight people answered the question of what they sell. HFUU members sell vegetables, greens, herbs, flowers; fruits; meat, milk, dairy, eggs and value-added products and also education and training services. Figure 5.4 shows a word cloud representing the responses from this question:

Figure 5.4 Word cloud: What do you sell?

HFUU members were asked which product or produce makes them the most money. Among the answers were mangoes, citrus, coffee, eggs, chicks, microgreens and others (see figure 5.5). Members were also asked which product makes them the second most amount of money. For that question answers included greens, vegetables, herbs, trout, value-added products, sauerkraut, and kimchee.

Figure 5.5 Word Cloud: What makes you the most money?

Alternative farmers are new and educated farmers. The term "beginning farmer" refers to those who have been operating a farm or ranch for less than 10 years (ATTRA, 2019). As mentioned in chapter 2, beginning farms are smaller on average than established farms. Beginning farmers often report that their biggest challenge in getting started in farming is access to enough capital. Not surprisingly, the households of beginning farm operators have a lower farm and nonfarm net worth than the households of established farms (USDA, 2013). As observed by Lass et al. (2003) CSA farmers are often youthful, highly educated and the farms are typically small producing organically grown foods. In this study, 89% of farmers who were interviewed were new and beginning farmers i.e., operating less than 10 years and did not inherit a farm from their family. On average, farmers had operated 7.8 years on average and 5 years median. The longest operation was thirty years and the shortest was less than one year. All but three farms had operated less than ten year and thus 84% of the farmers are considered beginning farmers. The farmers were also well educated. About 85% of farmers had attained a bachelor's degree or higher- only one farmer had a directly related degree in agriculture most had degrees in the liberal arts, and a couple farmers had master's degree and one farmer had a PhD degree.

Most farmers would say that their education background urged them to take action to create a more a sustainable food system. Many of the farmers had a diverse range of degrees from the University either

bachelors or masters. Farmer George is a PhD and went into farming with his wife who was a social worker:

George*: "So Laura has been farming for ten years sort of. Her transition, she was a social worker before, so she started family farming when we lived on an island south of here and I was a high school teacher. And then I finished my PhD at the University of Washington and got my first academic job at Washington State University."*

In fact, from Chapter 3 table 3.1 shows that 84% of the farmers involved in this study had a University degree and only one farmer had a degree directly related to her farm profession. Most other degrees were in social sciences or humanities and people who were farming often felt a sense of urgency about the impact they would like to have in their localities.

Farmer Chester share a comment about the connection between studying food and being motivated to work on small-scale farms:

Chester*: "Ultimately, I had completed what I could complete in the corporate organic sector remaining minimally compromised to my intent, mission, and vision of the organic industry. I got in to the organic food and farming world because I had developed ideals and morals that food should be clean and healthy and that farming should be sustainable and regenerative. And that's what I studied when I was in college and that's what motivated me to work on farms during summers. I went from there to the largest distributor of organic food in the country at the time; my past career took me through the entire food chain of farming, processing, manufacturing, fresh, frozen, juice, and dry distribution, larger farming, larger manufacturing, sourcing, global sourcing, certification, marketing and sales."*

The most common theme was that people studied something not directly related to food production but rather more in the realm of social issues. Farmer Abraham mentioned and other farmers also commented that social issues motivated them to go into farming. Farmer Abraham studied theology before going into farming:

Abraham*: "Well my background…I have a Masters in Theology…Yea so my path, so I went to grad school, I had been involved with the church and was. But the church in a way of being active in community affairs and involved in social issues and so I done a variety of whatever work in non-profit church related organizations and one of them being a farm so I worked there for 5 years and that was really what got me to want to do this same kind of project…so that was my background I had a background in humanities and then got involved in farming."*

Alternative farmers and land arrangements. As observed by Lass et al. (2003) who studied CSA farmers in the U.S. mainland, 23% of the farmers did not own the land they operated making other land-use agreements very important. These different arrangements could include rental agreements, long-term leases, and ownership by a CSA organization (other than the farmer) or a land trust. In the same study, most land-use contracts (over 68 percent) were made with private landowners. The next most popular category, other, accounted for about 17 percent of the arrangements and included a number of non-profit organizations (universities, churches, conservation organizations, etc.). In addition, beginning farmers have struggled to access and afford adequate farmland to operate at a size capable of earning a sufficient profit (USDA, 2013). Interviewed farmers' land tenure arrangements varied from private ownership (O) to private leases or private rent (Pr. L.) and public leases (PL). Most common was private ownership of land, 80% of operations owned their own land. Four of the remaining five operations rented or leased and one farmer had a public lease. In the survey, HFUU members were asked where do they grow/ raise food? (n=108, CI=9). The result read:

1. My yard 32%
2. Someone else's farm 8%
3. My own farm that I own 32%
4. Friend/ family's land 8%
5. Other 20%

   Leased land 50% of other

   All of above

The survey results show a greater diversity of land arrangement compared to farmers who participated in interviews. Another HFUU survey finding shows that while 83% of people said that they grow food, only 41% of people said they own a registered farm. While most farmers interviewed for this study

owned their own farmland, several other land arrangement were popular including private and public leases, rent, and a combination of multiple land arrangements such as farmers owning and leasing land simultaneously.

Alternative farmers, grants, and non-profits. The latest agricultural census in 2017 acknowledged the growing role of community-based organizations in food production (USDA, 2017). Levkoe and Wakefield (2011) argue that non-profits can play an important role for achieving larger social transformations of ecological sustainability and social justice in the food system. Lass et. al. (2003) show that non-profits and other community organizations, can play an important role for providing new farmers with access to land. In Hawaii, many prominent food producers are part of a non-profit organization with a larger social or cultural mission. For example, MAO farms (www.maoorganicfarms.org) is the largest organic farm in Hawaii with a central mission is to cultivate young leaders and Kahumana Organic Farms (www.kahumana.org) operates a non-profit that provides housing for the homeless. In this study, about 37% of farmers who were interviewed had received grants. Grants are commonly associated with non-profit status, but some for-profit operations also received grants. A third of the operations interviewed were established non-profit corporations and several farmers had plans of incorporating non-profit status in the future. Non-profits and fundraising through grants will be discussed in more detail further down under the section alternative farmers and business planning.

Alternative farmers and volunteers, interns and apprentices. Labor arrangements are another key aspect of alternative farming. As reported by Lass et al. (2003) nearly 68 percent of the CSA farms used between one and four workers, about half were paid a wage. Other studies have shown that agricultural interns, apprentices, volunteers contribute to increased local food production while receiving hands-on training and work experience on small-scale farms (Ekers. et. al., 2016; Azizi and Mostafanezhad, 2016). A great number of food producers in Hawaii also rely on interns, apprentices, and volunteers to grow and sell food for local consumption in Hawaii (Azizi and Mostafanezhad, 2014; Mostafanezhad et. al., 2015). The practice and values of farm hosts play a vital role in the facilitating of what are perceived by both hosts and volunteers as an authentic farm learning experience (Azizi and Mostafanezhad, 2014). In 2017, 9,047 unpaid workers labored on 3,755 farms (51%) compared to 11,891 hired workers on 2,073 farms (28%) in Hawaii. In this study, about 95% of interviewed farmers

operated with volunteers and interns. They were either from outside the farm or unpaid help from within the family. Internship programs that included stipends were often developed by farmers as an extension to their existing programs for volunteers. Some farmers had these programs alongside paid labor; only 58% of farmers operated with paid labor. For the survey, about 35% of people said that they did hire labor (n 100) and, on average, they hired three people. Three people per farm is slightly below the average reported from Hawaii's farmers in the 2017 agricultural census with about 28% of the farmers hiring slightly above five laborers each on average (USDA, 2017). However, 1,192 farmers operating on 1 to 9 acres in Hawaii hired only 4,082, which is on average slightly above three people per farmer and about a third of the paid labor base in agriculture (USDA, 2017).

A common description from alternative farmers is that that it entails more work than can be done by one person, it takes many hands, and that having paid labor is hard. Many farmers share their homes with volunteers, interns, and apprentices when they do not have enough help from family members. Some farmers have changed their operation to be more educational because of the high demand for learning the skills of farming and living on farms. Farmer Arnold describes his coffee farm and having WWOOFers as his helpers. World Wide Opportunities on Organic Farms or WWOOF is a web-based service that allows potential farm volunteers who are usually tourists in Hawaii from the U.S. mainland to stay and work on small-scale farms. Arnold: "*And I am one of the 50 farms that's Certified State and Certified Organic and in the last 4 years I have won sliver gold sliver gold from Kona Coffee Council and I am really set on producing good coffee. That is to say I need help and without WWOOFers I couldn't exist. My wife is a software developer with an MBA in finance from Colombia and she sits behind her office here up here and has clients and does not participate in the farm or the coffee business and in a essence she has one business and I have 3 because we also have a bed and breakfast business. So the WWOOFers that I have play a vital role in my existence here and I found this out early on years ago when I started.*"

Farmer Calvin speaks about the connection between farming and education. Calvin: "*that's my nephew, he is really into this. This is a great classroom for kids.*"

Farmer Sarah and Chester share comments about how their farms have transitioned to focus more on education. Sarah: *"And its changed the whole nature of the thing, no longer is it really about the farm*

that sells at the farmer markets, it's more of an organization that teaches people how to grow their own food. Yea it's an educational organization more than production."

Chester: *"We're not trying to be a commercial operation. We're just setting it up and I believe that it is an underlying of my design to enable the farm to be a commercially viable operation at any point. We could if we needed to be. But as it is, that's not our purpose. Our purpose is really to be more of an educational format and more a place of a sanctuary for the community and people who come to the farm. Our farm is more about to serve, and give with graduates to what has been given in our food and in the land and in the work and in our self. And to have reflection in your land and in the food so that we generate that connection that we all have to eat and we really are what we eat."*

Farmer Richard describes the educational purpose of their farm and how farm volunteers helped with the curriculum. Richard: *"I figured people wanted to come and be on a farm, help on a farm. But then I learned that you know, and we were an education farm too we taught lessons to school kids once a week, different grades would come along so we were a nonprofit farm. Eventually we got certificate and learning center...I organized our farm into sort of categories so we had lifestyle block here we had fertility and management we had irrigation we had different types of tasks, you know there was always cultivation and weeding and planting and harvesting we had cycles for you know our weekly harvest for the CSA, we could harvest the root crops a couple days before delivery, the beans and vegetables and fruits the day before and then on the day of delivery we did the leaf crops and so as I got more systemized I would do things and then we would break up out work force that ok this week anybody one wants to really learn something if somebody really wanted to learn how animal husbandry, milking a cow they wanted to run the dairy component and making the yogurt or if someone was a baker and wanted to bake breads and offer them for the CSA we would try."*

Richard: *"I had kindergarteners through 10th graders coming once a week up to the farm so one day kindergartners came for they walk up and looked at the animals and then the next hour the 1st graders came and the next hour the 2nd graders came. Then the next day the middle schoolers came and then you know every hour and we again organized different sorts of groups of activities there was the animal, husbandry and mucking out the stalls making compost. There was weeding in the garden, harvesting beans and things like that and the little ones would make little fairy houses out of sticks. But, the thing*

was that once we got to the 3rd grade and up we would divide a class maybe with 20 kids in it into 4 groups of 5 kids or something and so I would take 5 kids and another WWOOFers would take 5 kids and the teacher would take 5 kids and so rather than trying to have 20 kids in the garden space this big just trying and so we would do stuff together too but it would help to ok this week you are working with the mature and making compost which was always dramatic, I would have an old tarp and they would muck out the stalls on the tarp and I had bar with ropes to the truck so they were the horses and pull the tarp over to the compost yard like a wagon, and we did things like that with little plow pulling through the stones. I actually worked with teachers, my wives a school teacher and that became a whole aspect of the farm was researching farm education, gardening education, we developed curriculum, you know age appropriate curriculum. That was a big part of our farm project and then that worked into the summer camp. So the WWOOFers worked with the kids. Some of them weren't that wasn't there really in their composition."

Farmer Abraham talks about the farm as a learning center to generate income but it should also be functional. Abraham: *"And also if you're going to be a learning center I think you have to still be a functional farm. That will have to be the core of the operation. It is kind of a little bit of a paradox that if you are a really good farm that can teach something you probably do not need to have the Learning Center as an income generating stream. But then if you are doing it as an income generating stream because you're not able to do the farming, I mean if it's really out of your control but you are really good farmer, then I can see that being a good choices. But if you're just a half ass farmer doing education as a kind of easier way of getting money that doesn't make sense because you're not actually be a good kind of learning center and not really showing people the best practices."*

Alternative farmers, Social Values and Motivations

Introduction. Changing ideas about the value of nature affects the way food is produced and distributed in society. This section explores the values and motivations of alternative farmers in Hawaii, describes alternative farmers' social, environmental and place-based values and shows connections to environmental and social views. Farmers' practices and related values have received attention from researchers, likely due to the importance of the environmental affects of these practices as well as the growing emphasis on environmentally and socially friendly agriculture (Lincoln and Ardoin, 2015). How we eat is recognized as a major factor of how natural resources and human labor is used and miss used (Kloppenburg et al., 2000).

The twentieth century has been coined *a unique century* by scholars of the environment, history, energy, and development (Smil, 2005; McNeill, 2000, Brown, 2008) In this period, human societies have gone through significant changes including unprecedented global ecological changes such as the current crisis in warming, chemical pollution in soil and water, and deforestation (Brown, 2008; McNeill, 2000). As a result, the post-WWII period has been called an "*era of intense environmental concern*" by historians (Williams, 1998, 275). During this period rising populations, rural-urban migration and urbanization, mass-production and mass-consumption have significantly changed individual lives and social structures: how human needs are met and communities organized (McNeill, 2000; Ball and Dagger, 2011). The case that the biological world has reached its capacity limits of anthropocentric impacts received critical attention during this time (Meadows et. al., 1972; Goodland, 1992; Daly, 1996). A new wave of social and environmental thought has been loosely developed with the notion of sustainability and environmentalism, which has significantly affected the ways we think about development, nature, technology and social justice (Brundtland Commision, 1987).

Conventional Agriculture	Alternative Agriculture
Centralization	Decentralization
Dependence	Independence
Competition	Community
Domination of nature	Harmony with nature
Specialization	Diversity
Exploitation	Restraint

Figure 5.6 Conventional and Alternative Agriculture Values from Bues and Dunlap (1990)

Environmental historian McNeill (2000) explains that agriculture experienced two major periods of increase: 1. a cropland expansion phase ending 1960s whereby world cropland amounted to four times that

of early 1700s, and 2. a cropland productivity phase after 1960s caused by industrial agriculture and the Green revolution whereby the invention of plant breeding, chemical fertilizer, pesticides and agricultural machinery yielded more food per acre. Despite Malthusian and Neomalthusian warnings that population will outgrow food supply leading to a catastrophe, the Green revolution (starting in the 1950s) produced new technologies that increased productivity and yields of more food per acre than was ever known before (Brown, 2008). Historians suggest that while the Green Revolution saved society from the Malthusian catastrophe, industrial 'conventional' agriculture now depends entirely on the use of fossil fuels and causes major population growth (McNeill, 2000; Brown, 2008). On the contrary, organic 'alternative' farming is 35% more labor intensive making its labor cost larger than that of industrial farming (Ord, 2010). Kloppenburg et. al. (2000) quoting Beus and Dunlap (1990) discuss the contradicting meanings "conventional" and "alternative" agriculture which Kloppenburg et al. (2000), in turn, expands upon (see figure 5.6 and 5.7 from Kloppenburg et. al., 2000).

1. ecologically sustainable
2. knowledgeable/communicative
3. proximate
4. economically sustaining
5. participatory
6. sustainably regulated
7. just/ethical
8. sacred
9. healthy
10. diverse
11. relational
12. culturally nourishing
13. seasonal/temporal
14. value-oriented (associative) economies

Figure 5.7- Attributes of Sustainable and Alternative Food Systems from Kloppenburg et al. (2000)

Lincoln and Ardoin (2015) demonstrate that environmental values and place attachment do correlate to a wide range of practices relating to farming. Findings from their research with farmers in Kona, Hawaii indicate that a more comprehensive understanding of farmers' values, place connections, and sustainability-related decisions may be important in understanding individual farmer's actions as well as the broader implications of those actions for land-use changes and environmental effects (Lincoln and Ardoin, 2015).

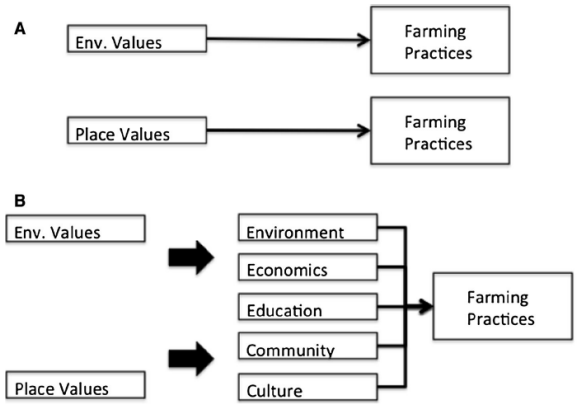


Figure 5.8 Lincoln and Ardoin (2015) conceptual diagram of connection of farmer values and practices. Conceptual diagram illustrates from most previous studies (a) that have independently examined the relationship between either environmental values or sense of place and farming practices; and illustrating Lincoln and Ardoin (2015) study (b) that examines both environmental values and sense of place and how they correlate to different categories of farming practices.

Alternative farming and being connected to nature. One view that resonates with many alternative farmers is that of the intrinsic value of all living beings expressed by philosophers such as (1970 [1949]), Naess (1973) deep ecology, and Singer (2000). Bues and Dunlap (1990) identify harmony with nature as one of the values of alternative farming and further identify six nuances under this value including: 1. Humans are part and subject of nature; 2. Nature is valued primarily for its own sake, 3. Complete life-cycle where growth and decay are balanced, 4. Natural ecosystems are imitated; 5. Production maintained by development of healthy soils, and; 6. minimally processed naturally nutritious foods. While conventional farming is characterized by negative environmental effects such as large scale deforestation, which is a core driver of species extinction world-wide (Wilson, 2003). Alternative farmers can and do pay attention to the intrinsic values of life itself and feel connected to the biotic community that surrounds them. For example, farmer James shares his view on farming in Hawaii. James: *"People go wow! How do you grow this? …I'm not growing anything. I'm just a witness to it all, I'm just a servant. I have nothing to do with that tree growing, I'm just watching it grow. I'm marveling at it. I'm getting ready to pick the food and eat it. And I feel blessed while I'm sitting down doing it. So that's a beautiful thing about farming is being connected, that's very nice."*

Farmer Anuhea make a similar comment about her values for farming. Anuhea: "*Personally to me it's about living in harmony with nature, but studying environmental issues in college and looking at the industrial ag model as one of the fatal flaws of the whole system. But taking a permaculture course in Australia gave me a foundation. I felt like I had a toolset to start living in a way that I was comfortable with.*"

Kloppenburg et al. (2000) argue that ecological sustainability is a major component of alternative agriculture with emphasis on regenerating the soil. In the HFUU survey, 71% to 90% of members agreed or strongly agreed that (n=110) regenerative agriculture by cover cropping along with other regenerative soil health practices should be a strategic objective for the Hawaii farmers union. Farmer Calvin makes a comment about practices of regenerative agriculture and how he makes worm tea to produce healthy soils and composting: Calvin: "*I make my own earth worm casting from juice pulp I get from the health food store. I get one hundred pounds per week…So regenerating the land, making the land with Indigenous microorganism inputs is Aloha Aina and Malama Aina…*"

Farmer James makes another comment about alternative farming and being connected to nature. James: "*This is our farm. I came into this world naked I'm going to leave this world with nothing. This is all a gift and this is your birth right. The Earth is our birth right the ocean is our birth right the air that we breathe is our birth right. So I try to teach the young people that that…we are full of love, life is love and if we are just giving it then it is coming through us but if you hold it back and dam it up then you are going to start feeling pain. And so that's the thing I love about farming is it's such a beautiful opportunity to be in nature, to be a witness to beauty and magnificence. "*

Alternative farming means no pollution. A common belief is that sustainability means no pollution. That was strong argument put forward by Rachel Carson's *Silent Spring* (1962), which highlights connections between industrial practices and negative effects of its pollution of air, water and soil. In fact, wherever it developed, industrialization caused chemical pollution leaching into soils and water (McNeill, 2000). As a result, alternative farmers care about not polluting the planet through their specific method of food production. In Beus and Dunlap's (1990) description of alternative farming they describe concerns for pollution having restraint. While the conventional agriculture worldview operates on exploitation with external costs often ignored, Bues and Dunlap (1990) argue that in alternative agriculture all external costs must be considered. This is not too far off compared to Hawaii's alternative farmers. For example, Farmer Jane shared about her beliefs in no pollution. Jane: *"Well the fact that it is better for you. I have always been anti pesticide, herbicide and all them cides. What does cide stand for? Death. Pesticide kills pest. Herbicide kills weeds. But it all kills you… I truly believe that. Whether I can prove it or not it doesn't matter…"*

Another organic farmer shared a similar story about farming without chemical additives. This is what farmer Scott said to visitors on his farm when they inquired about organic farming. Scott: *"I said, well actually it's really easy. If you have really healthy soil and healthy plants, the pests and the diseases won't bother them. But when you're putting down chemicals and poisons on the ground and spraying them, then they are going to be stressed and they are going to get all kinds of pests and diseases. It's a vicious cycle… it's just like the human body. If you're eating good and you have a good lifestyle, you are going to be healthy. But if you are eating crap food and a junk lifestyle then you are going to be sick… I do biological farming, I'm farming worms. Worms do the farming. I want to make sure that the worms are happy. If the worms are happy, my plants are happy, I'm happy."*

Kloppenburg et al. (2000) suggest that a sustainable and alternative food system should preserve and enhance the health of both the workers and the eaters while being free from contaminants and pollution such as chemical pesticides and herbicides. Several farmers in Hawaii shared their perspectives about food being medicine, organic farming, and the cost of unhealthy food. Farmer Laura shares her perspective. Laura: "*But then one can also talk about the value of work. You two both being teachers, and I was a social worker for many years. What does society value? Are we paying teachers, are we paying social workers? Are we paying farmers? I think that if you are a US farmer there has been the subsidy of kind of big farms and corn. Americans are used to cheap food and also around the subsidies there's no education around, not all food is equal. How you treat your body, and sort of the long-term cost of your health. It can be produced inexpensively, but you don't see the long term cost to the environment and your health.*"

Farmer James comments on the difference between the milk produced on an alternative farm versus the conventional milk available to people commercially. James: *"every kid that comes in here they say "I'm allergic to milk," I say to them "when did you ever have milk?" No one I've ever known have had milk, it's not available but this milk here, its medicine. It's a living probiotic food it's really really good. So what do they do, they go out and bring home this pancake syrup. The first ingredient, corn syrup. The second ingredient corn syrup and the all the rest of the ingredients are chemical that you can't even pronounce the name so they come here and there is this big learning curve about how to take care of yourself."*

Alternative farmer Barbara shares a view of about eating meat, being humane and showing love for her until their last day. Barbara: "*…we name them. And I feel like every day they have should be good. I know a lot of people the ones they are eating they don't name or they don't get close to them like that. That's for you, that's not for them. So you're a human, let's act evolved and give them a fantastic life and a really crappy day and then they get to nourish us. That's what it is. And you know what, if it hurts you, good because it should. When you eat meat it should hurt it should say like "oooh something gave its life for me." But the boys, well the boys are always super friendly. And harvest day, slaughter day, you don't want to talk to me for two weeks after that. Because it hurts."*

Alternative farmer James talks story about his philosophy of organic farming, microorganisms and the human body. James: *"So just today I was at the docks and the guy was weighing the pellets, the guy working at Young Brothers, and he said something about isn't it really hard being an organic farmer? How can you be an organic farmer without using chemicals? And I said well actually its really easy. I said if you have really healthy soil and healthy plants the pests and the diseases won't bother them. But when you're putting down chemicals and poisons on the ground and spraying them, then they are going to be stressed and they are going to get all kinds of pests and diseases. It's a vicious cycle. And I said to this guy it's just like the human body. If you're eating good and you have a good lifestyle you are going to be healthy. But if you are eating crap food and a junk lifestyle then you are going to be sick aren't you. And he goes yea. So we are the microcosm of the macrocosm. We are all connected and what runs the world is the microorganisms and that's the kind of farming we do. I…I do biological farming, but basically you're working with biology. I'm farming worms, that's what I'm doing. Worms do the farming. I want to make sure that the worms are happy. If the worms are happy, my plants are happy, I'm happy."*

Farmer Calvin shares how he was inspired to promote health after attending an Acres conference. Calvin: *"We wanted to explore that whole relationship between the body and soil and going to Acres conference we were just wow. I stand on their shoulders today."*

Alternative farming is to think about the ability of the next generation to meet their own needs. A central idea and definition of sustainability was established by the Brundtland Commission in *Our Common Report* (1987) and says that "*sustainable development is the kind of development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* Environmental philosophers have also built strong connection between sustainability and thinking about the next generation. For example, Singer (2000) talks about our responsibility toward future generations and asserts that the least we can do is to preserve a "choice" of future generations to see a world of wilderness that has not been created by man. In Bues and Dunlap (1990), paper on alternative agriculture, includes values such as preservation of farm tradition, permanence, and benefit to future generations. Several alternative farmers in this study had something of their own to say about future generations. For example, farmer Gerald shares the vision and values of his farm. Gerald: *"Sustainable means I imagine every person on the planet right now being able to live this very same standard of living in such a way that it would be perpetuated in the future for seven generations without*

there being a detriment to the planet…we got to be really clever, more clever then what is being referred as sustainability to become truly sustainable…It's not going to be easy. It will require the upmost of human ingenuity working through the right values. Human ingenuity needs to be coming from the right values for sustainability."

Farmer James shares his beliefs about servicing the next generation through alternative farming and educating the travelling volunteers that come through his farm. James: *"I have so much to teach that they would never learn in school. They don't teach this kind of stuff in school, how to be conscious, how to use your body, how to use a tool, how to have a focus and a purpose in your life. They don't teach that in school. And so that is what trying to teach these kids…I read the most beautiful quote in the newspaper once by Winston Churchill. He said 'you make a living by what you receive, you make a life by what you give.' It's so beautiful."*

The section above on volunteers, interns, and apprentices on farms showed how some alternative farmers have reorganized their structure and mission to become a learning center for future farmers. There is a clear connection between farmers who value future generations and teaching interns on the farm. Here is an example from Farmer Chester that combines education, sustainability agriculture and future generations. Chester: "*We try to create an environment with the student who come and the interns who come and ourselves of cultivating and enhancing and enabling our farm to be more of a place where our revenue is not based on what we get, what we sell, what we take, what we earn our revenue is based on what we give and how we serve."*

Farmers Abraham share him goals about farming in Hawaii and with hope to contribute to a better community. Abraham: "*My goal is to involve more local young people from Hawaii to teach the skills of sustainable agriculture and have them being able to put those skills back in the community.*"

Alternative farming is to be independent. Rejecting the *practicality* of a singular environmental ethic, some philosophers (e.g. Light and Katz, 1996) have pointed to a new way of thinking that can engage a diversity of environmental movements. The view of *environmental pragmatism* is concerned with practical matters of what should be done rather than philosophical and moral truths (Light and Katz, 1996). Planners also agree that although each environmental perspective provides a certain social and environmental understanding, no one answer is best in all situation (Campbell, 2006), yet we need

to understand them all and their effects in different situations (Desjardins, 2012). Bues and Dunlap (1990) describe alternative agriculture as based on renewable resources and simpler and non-materialistic lifestyles. Farmers Jane describes her way of thinking. Jane: *"And we have a motto here: 'start where you are, use what you got, and scrounge for the rest.' Low budget aquaponics, we are not rocket scientists."*

Farmer Jane's comment does not only corroborate Bues and Dunlap's (1990) point on restrain but also shows how alternative farmers value independence with smaller and low-capital production units and reduced reliance on external resources. According to Bues and Dunlap (1990), to foster independence, alternative farmers build their own community self-sufficiency. Self-sufficiency was a common topic for farmers in this study and reducing amounts of external inputs. Gerald's farm functions as a learning center where interns and guests come and stay to learn about sustainable living and pay a fee in return; as a result, they have to sustain a community of sometimes ten to fifteen people. Gerald: *"…we produce like 80% of the food on the farm but there are inputs there's the gasoline to drive to town to get chicken feed even though the chicken feed even though we grow some of the chicken feed on the land…but really to tell the honest truth probably 80% of what we produce gets consumed on farm and our largest market for our value added farm produce is our interns and our guests who actually come here to have the farm experience on the farm. Their fee is paying for those foods where they are also learning to produce and process. We have given up on trying to whole sale …the capitalist economy is not enough for us. The farmers markets are not worth it, by the time we have harvested, cleaned, set up and taken it down we've worked on it for three days. It's not worth it; we end up selling our produce too cheap. It's better that we produce for our own community and the community of folks that want to learn about farm-to-table systems that come travelling through here."*

Farmer Arnold shares his values about cooking and not wasting on the farm. Arnold: *"I'm only allergic to wasting food, that I push people to expand their knowledge of cooking. I love to cook, I do all the cooking in the B&B every morning and I love cooking, and when people come here I say look it up in my favorite cookbook it's called Google so if you don't know how to make something look it up and make it. Is it something good give me a bite, you know communal things here are at least once a month or when new WWOOFers come or when good WWOOFers leave we have a dinner here for 6 or 8 or 10 people and sit together and have that."*

Some farmers' motivation for farming were link directly to their ability to make a living on farming, which is another aspect of independence. Reduced reliance on external inputs meant that alternative farmers have to find a way to be financial sustainable. Kloppenburg et al. (2000) argue that economic sustainability is a key component of alternative agriculture with the emphasize to create a system in which farmers and other stakeholders can generate profits from their business activities and capable of producing an acceptable living standard for its workers Farmer Anuhea shares that she was motivated to operate an alternative and sustainable farm so she could inspire others to do so. Anuhea: *"I'd love to be making money. The initial whole thing for me is I wanted to do a small-scale operation and figure it out so I could honestly advocate for other people to do it."*

Farmer Lyndon's goal is to produce an acceptable living standard for this workers and he believes in paying people living wage and that a business that cannot pay people salaries should stop existing.
Me: *"How many employees do you have?"*
Lyndon: *"About 2.5. Full-time with benefits, healthcare, and TDI and workers comp, payroll and all that. And I pay living wage, I don't pay minimum wage…no I don't do that. People have to live. They have a family, they have to maintain a standard, a living standard. And for this business to be sustainable you have to treat people the way you want to be treated. They are not supposed to earn minimum wages, and people still need health care coverage and retirement and then all that. And it means if you don't pay that you're not a sustainable business. Then you cannot operate like this for a long time…if your business cannot pay them then you should not be in business operating a farm. Yeah because it not fair for people who work there."*

Customers are not always as interested in workers' living standards. The author asked farmer Lyndon if his customers at the farmers markets have asked him about how his workers living standards or how much he spends on salaries. Lyndon: *"I don't think they know. They know about my organic certification. It's important and no one wants to talk about it because it is a problem. If you start putting a living wage to the farmers, they cannot compete. Yeah you have to pay a living wage and then adjust the price. Raise the price. And then tell people you are paying living wage. I just do it because I think it is the right thing to do and not because I want to put other people down. I want to do the good thing, and treat people right. And I don't care how other people do that."*

As discussed, many of the alternative farmers in this study have received grants, but farmer Abraham argues that relying on grants is to de dependent on external resources. Abraham*: "Grants are great. But if you want to encourage people to go into farming it has to be profitable on your own. There is a non-profit model how it can be done. Really the goal is to make it viable career choice that can make money and not depending on grants."*

Another point of independence in Bues and Dunlap (1990) is the primary emphasis on personal knowledge, skills and local wisdom. Kloppenburg et al. (2000) suggest that knowledge and information should be available from multiple and decentralized sources including local ecological and Indigenous knowledge in alternative food systems. Farmers James shares his passion for farming and recognizes the mentors that led him to where he is and taught him the skills of farming. James: "*I was fortunate because I have had two mentors in my life, my first mentor I was 7 the mentor that really took me the most in my life I was 9 but they were all grandmothers and what they taught through their actions was a love for their work so if you're doing something in your life you should be doing something that you really enjoy, you should be doing something that you love doing therefore you will have a meaningful and so that is what farming is for me. It's not about money."*

Alternative farming is to create freedom space. Through a social movement lens, an even more independent view of alternative agriculture has to do more with being free from oppression than it is about understanding the human role in a biotic community. For example, Bookchin's understands sustainable agriculture as part of a lifestyle in which both humans and their natural surroundings can live free from dependence on dominating institutions and practices (Desjardins, 2012). To Bookchin, sustainable agriculture reinforces a lifestyle in which local communities become sustainable and self-sufficient. *Social ecologist* such as Murray Bookchin see individuals as part of a larger *community* where social hierarchies provide both the psychological and material conditions- the motivation and means- for exploiting and dominating nature (Bookchin, 1988). Fundamental change meant that humans had to be free from of all forms of external control and domination to pursue fully conscious self-determining activity: the form of community where humans experience true freedom, is the only type of community where humans can live in harmony with their natural surroundings (Bookchin, 1995).

While Bookchin's social ecology seem to have a similar strands of disposition toward domination and elites as Naess deep ecology (1973), the norm shifts from self-actualization of individuals [to enter a biotic community] to self-determination of communities [to realize a dialectic community]. A dialectic relationship is a middle ground between individuals as products of society and society as nothing more than a collection of individuals- a community created by human actions but community also creates man (Bookchin, 1987). The dialectic community poses some potential to tackle problems of oppression through collective action (Desjardins, 2012). To Bues and Dunlap (1990) alternative agriculture requires creating community that is decentralized, independent with increased cooperation beyond individual self-interest. Farmers Gerald shares his community's values for why they do alternative farming. Gerald: *"The intention with our community is to create a social maluge that supersedes or transcends individualism. Not that individuality is bad, but there is a social fabric that we need to plug into places. Not just as members of a nation or the state or a town or even a neighborhood but on a daily basis it's something more than just myself or me and my wife and my kids its our belief about human nature fundamentally and so that's what we are attempting to recreate in our community …no one owns it, its no ones place, its everyone's place.*

For some radical scholars with reformist undertones, the effects of capitalist society are so widespread that the only thing left for its opposition to do it to create free-zones where life can be lived and opposition can be built without being absorbed by what is going on around it. For example, Scott (2009) describes *Zomia* a kind of historical "nowhere" land whose people in Southeastern Asia were immune to the influence of the mainstream that was surrounding them and the rest of the world. Spaces and places of hope is another term for a similar type of phenomenon that aims as building resistance within capitalist society (e.g. Harvey's (2008) Right to the City). In addition, Kloppenburg et al.'s (2000) attribute of associative economics support the idea of community self-determination. Some alternative farmer's motivations for farming align with building a free zone where anyone is invited to be who they are. For example, farmer Jeff explains his purpose of having a farm. Jeff: *"Right behind the gate right there its freedom! I love people to know that they have never experienced that…A lot of the WWOOFers come from torn families and they're like getting away.. it's really a bunch of misfits [who] found each other on this farm. I'm a misfit for sure..."*

Farmer James shares a similar story about hosting people who come from a difficult background and often have no other place to go. James: *"When I came to Hawaii I had to spend my time hiding or I would have gotten killed… this [farm] is a sanctuary. You can come here and sleep here and not worry about anybody kicking your head in. You are totally safe here and a really beautiful place to be… I have been hosting people on my farms for 36 years. When I first started I used to take a lot of my Vietnam brothers because some of the Vietnam era and at the Vietnam there are a lot of people I meet who were, they needed help they really need help and so I would take them in because I figured the best thing you can do for someone who has been traumatized is to give them something to do and some good food to heal them…"*

Alternative farming, bioregionalism and spirituality. Bioregional thinkers approach the World according to ecological attributes, imagining that human activities and decision-making can be directed in ways that are more closely aligned with their criteria of ecological sustainability in the places they inhabit (Feagan, 2007). Kloppenburg et al. (2000) suggest that a sustainable food system handles activities from production to consumption within close range signified as a bioregion or bioregionalism. In addition, authors emphasize that an alternative food system is relational with producers, consumers, processors, and other stakeholders have direct face-to-face relationships or are part of networks embedded in values. In the HFUU survey, 81% to 99% of people (n=110) agreed or strongly agreed to make it a priority to buy and eat local food.

Kloppenburg et. al (2000) discuss sacredness, spirituality and culture as key attributes of alternative food systems. For example, authors suggest that to acknowledge to sacredness of foods to an acknowledgement of the sacred and spiritual dimensions of food and food-based relationships (Kloppenburg et al., 2000). In addition, Kloppenburg et al. (2000) suggest that cultural continuity as a key function of alternative farming. Alternative farmer James described his connection to place, culture, and personal responsibility in Hawaii Island. James: "*I got this property simply by asking, this is my 6th farm they have all been gorgeous and some old local person once told me that my past life I extremely insulted and upset Tutu Pele and so she brought me back as a workers slave. She keeps giving me these farms to take care of. Because when you have land in Hawaii its called Kuleana which means responsibility. When you have land you have responsibility to the land to protect it and to do what's right. I've never had a bad day in Hawaii I wake up every day and be very grateful… I feel that everything*

that I received in my life has been a gift and a blessing and having a farm is such a blessing and when you're doing it organically it takes a lot of hands and it's a beautiful thing to share, I like to share it."

Conclusion

The twentieth century was a period of intense environmental concern and it produced social counter movements to industrialization such as sustainable agriculture and organic farming. However, the movement of alternative farmers has created several and diverse forms of social values around sustainability and agriculture. While some view alternative agriculture as a specific method of food production that eliminates harmful chemicals from being used, others call for more comprehensive responses to the ills of society such as addressing individualism, opposing repression and building free zones from capitalism. Alternative farmers' motivations and values are key considerations to understand environmental effects resulting from their practices and the growing emphasis on environmentally and socially friendly agriculture.

Alternative farming and organizational lifecycles

The purpose of this section of the research is to compare and contrast alternative farmers comments with literature about organizational life cycles with the hope that understanding different stages of alternative farm organizations in Hawaii can be useful for promoting organizational survival and to better understand the kinds of policies that can support it. As noted above, in this study, 89% of farmers who were interviewed were new and beginning farmers i.e., operating less than 10 years and did not inherit a farm from their family. On average, farmers had operated 7.8 years and 5 years median. The longest operation was thirty years and the shortest was less than one year. All but three farms had operated less than ten year and thus 84% of the farmers are considered beginning farmers. During the project, the author was inspired to explore life-cycle analysis as alternative farmers made comments that suggest: 1. their operation experience many changes during the start-up period; 2. The learning curve was steep; 3. financing, marketing, labor, and entrepreneurship were crucial aspects of alternative farming that change with time and experience. As a result, the author visited some farmers multiple times over the last decade. In addition, many of the farmers who were interviewed only once would naturally reflect on how their operation had changed over time and what, why, and how they are doing something different from when they started. It is important to point out that farmers' capacity to

change and improve over time varied and, as a result, life cycle models might apply better to certain situations: while some farmers learned and changed crucial aspects to improve the operation, others did not give it the same attention. Nonetheless, lifecycle analysis can help us understand why and how alternative farmers use different strategies at different stages of their business operation.

Adizes (1979) views organizations from a perspective of parents who are raising children and suggests that people, products, markets, even societies, have lifecycles-birth, growth, maturity, old age, and death. He argues that at every lifecycle passage a typical pattern of behavior emerges and that, for example an organization can be like an infant: it requires its "milk" (operating capital) every so often (Adizes, 1979). Jawahar and McLaughlin (2001) suggest that organizations face different pressures and threats at different stages in the organizational lifecycle. Therefore, at different stages different stakeholders become critical for organizational survival. Consequently, depending on who the critical stakeholders are at each stage, an organization is likely to use different strategies to deal with those critical stakeholders versus other stakeholder groups (Jawahar and McLaughlin, 2001). Because threats and opportunities vary with lifecycle stages, organizations are likely to have different needs, in terms of resources, in different stages of the organizational life cycle. In some lifecycle stages, certain needs are likely to be so critical that if they are not fulfilled, the organization is unlikely to survive (Jawahar and McLaughlin, 2001).

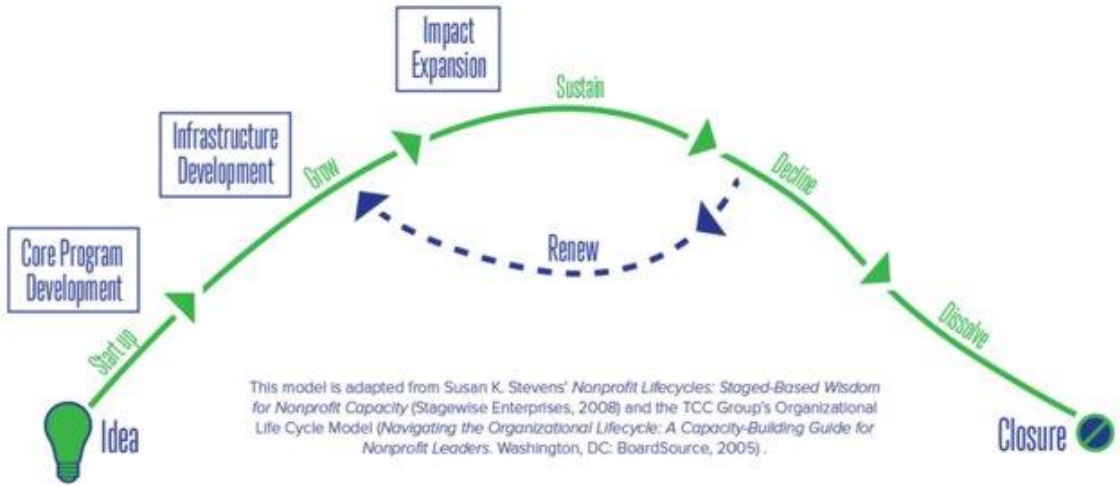


Figure 5.9 Organizational life cycles from Bryan and Bharath (2016) identifies stages of non-profit formation

Different research describes various stages of an organizational life cycle; however, in general, the life cycle of a typical organization consists of four identifiable but overlapping phases of start-up, emerging

growth, maturity, and revival (Jawahar and McLaughlin, 2001). Adizes (1979) identifies multiple organizational passages including courtship, infancy, go-go, adolescence, prime, maturity, aristocracy, early bureaucracy, bureaucracy and death. To Adizes (1979) each stage requires a different set of arrangements for Production (P), Administration (A), Entrepreneurship (E), and Integration (I) or team efforts. Priorities of top management vary with organizations' life cycle stages and research suggest that the pressures, threats, and opportunities in the external and internal environment of an organization vary with the each stage (Jawahar and McLaughlin, 2001). Almost all alternative farmers and their organizations in this study fall somewhere between start-up and emerging growth stages and have some experience that reflect Adizes (1979) passages courtship, infancy, go-go, and adolescence. There are few, if any, examples of farmers operating at prime or mature passages, although there are likely some examples in Hawaii that were not included in this study. Only one organization experienced death or bankrupcy yet it never reached the Go-go passage.

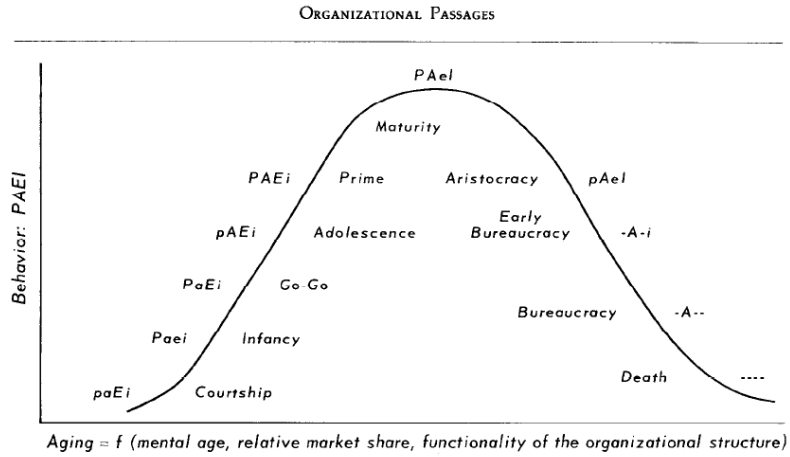


Figure 5.10- Identifies multiple organizational passages including courtship, infancy, Go-go, adolescence, prime, maturity, aristocracy, early bureaucracy, bureaucracy and death from Adizes (1979).

Start-up stage. The start-up stage is the period in which developing and implementing a business plan, obtaining initial financing, and entering the marketplace are dominant concerns (Jawahar and McLaughlin, 2001). At this stage the most critical needs, which have the potential to threaten organizational survival, are start-up funds, cash flow, and customer acceptance. Adizes (1979) describe the courtship passages of the start-up stage.

> At the courtship stage there is no organization. At this passage, the most pronounced role is entrepreneuring. Founders are basically dreaming about "what we might do." There is excitement. Promises are made that later, in retrospect, might appear to have been made irresponsibly, without sufficient regard for the facts and reality. The excitement is accompanied by frantic activity. One gets a sense that the founders are in love with their idea. They behave like missionaries searching for an audience to convert (Adizes, 1979).

The idea stage. Bryan and Bharath (2016) show in figure5.9 that an organizational lifecycle start with an idea. They further describe the stages in figure 5.11. Authors suggest a key questions is whether the dream is feasible at the grassroots intervention level. Not all farmers spent time up-front on understanding the feasibility of their dream, but some of them did when the farm was just an idea.

Nonprofit Life Cycles Overview

Stage	Key Question	Duration	Obstacles	Opportunities
Grass Roots - Invention	Is the dream feasible?	0 – 5 years	• Resistance to forming • Lack of funding/expertise • No outside support	• Creativity • Energy for the dream • Excitement to join
Start-Up - Incubation	How do we get this started?	1 – 2 years	• Fear of formalizing • Sustaining initial enthusiasm • Focusing the founder and energy	• Excitement of funders • Charismatic leader • People wanting to belong
Adolescent – Growing	How can we build this to be viable?	2 – 5 years	• Absence of systems & accountability • Overwhelmed with change • Change may alienate funders, clients, staff and board • Danger of becoming isolated in the system	• Sense of accomplishment • New faces, 'arms and legs' • Diversification in all areas of the organization • Rejuvenation for the founders
Mature - Sustainability	How can we ensure sustainability?	7 – 30 years	• Lack of or too much control • Lack of risk taking • Board & staff too operational • Unable to transition in to a governance board • Conflict between old and new	• Feeling secure • Adequate resources • New staff/board – fresh ideas • Ability to try something new
Stagnation & Renewal	How, if any, can we renew?	2 – 5 years	• Resistance to change • Inability to address key challenges • Declining excitement • Isolation of the agency	• Wisdom from past • Strategic Partnership opportunities • Chance to take risks again and think 'out-of-the-box'
Decline And Shut-Down	Should we close?	1 – 2 years	• Financial crises • Inappropriate leadership • Loss of staff and volunteers • Lack of any passion	• Commitment to complete turnaround • Graceful 'sunset' or merger

Figure 5.11- Organizational life cycles overview from Bryan and Bharath (2016) describes the stages of non-profit formation

Alternative farmer Arnold explains the work he engaged in when his farm was just an idea. Arnold: "*So I took 18 months, I wrote a program, I visited and interviewed 20 farmers, took all this and that and then we finally bought a piece of raw unimproved land in September 2003 and immediately started working*

on it so we had to pull the trees out and level the ground and I have planted from scratch. And the trees went in March 2004."

Yet most farmers who were interviewed had not engaged in the detailed work like Arnold before starting the farm and ended up, as Adizes (1979) suggested for the courtship passage, pushing through with excitement. Alternative farmer Kimberly talks about how she did not make an informed decision when she first went into business. Kimberly: "*Well it'd be better if you did it before you started. And I wish that we would have done that before we started. If you're already established and you're growing tomatoes and now you want to can your own tomato sauce, then ok…we can send you to study the canning process to make up your mind. And say ok I will go into this, or I will not go into this business. I never got a chance to make an informed decision. I just said, Ok this is what I am going to do and then, whatever obstacles came up, I would pursue them. But had I gone to a creamery prior, I would have understood more of what my cost and challenges would have been. It would have saved me a lot of time, and money, and mistakes.*"

At least three the farmers started their operation as an offshoot of an existing parent company. Farmer Lyndon talks about how he started his mushroom farm. Lyndon: "*We have a recycling company. We go around and collect waste. I wanted to expand the company. And then the company turns into that… so it started with recycling. The term recycle encompasses a lot of different items. We do not recycle food waste, but we recycle yard waste. That is how it started.*" In those cases, support from the parent company was crucial for the survival of the farm and, in some cases, provided them with quite of advantage over other farms who did not have the same support. Adizes (1979) suggest that the mother like commitment of its founder is often what allowed the infant organization to survive a hostile environment.

Start-up stage: centralized leadership and investing. Jawahar and McLaughlin (2001) also suggest that securing financial resources and marketing problems were perceived as a crucial problem in the start-up stage. The specific marketing problems identified were establishing customer contact and assessing and defining target markets; finance problems were undercapitalization and locating financial resources (Jawahar and McLaughlin, 2001). Adizes describes the infant organization passage in the start-up phase:

> The infant organization has hardly any policies, systems, procedures, or even budgets. The administrative system might be "on the back on an old envelope" in the founder's vest pocket. Most people in such an organization, including the president, are out selling, doing. There are hardly any staff meetings. It is highly centralized and is best described as a one-person show. Such an organization is like an infant: It requires its "milk" (operating capital) every so often (Adizes, 1979)

Several of the alternative farmers describe the feeling of working on a small-scale farm in a similar way that Adizes (1979) speaks about centralization and a one-(wo)man show during the infant organization stage. Almost all farmers agreed that small-scale farming is a tough business and different from many other jobs and requires a variety of skills and roles from one person. Farmer Calvin claims that it takes extraordinary skills to operate a farm. Calvin: "*For farmers, anyone farming for a living, you're MacGyver. You have to be MacGyver*."

Alternative farmer Kimberly explains her view on operating a small dairy in Hawaii. Kimberly: "*Well anytime you have a small farm you do most of the work yourself. That's just how it is. And you talk to most small farmers, that just what they do, they do the farming. You don't have large group of people… And then of course the sales. When you're producing the product that we are, we're not only producing a raw product but a finished or value-added product, you know then you take on different roles that aren't really associated with the large dairies who just produce milk and ship it to the processing plant. So we are now the processing plant and the dairy. There are definitely different roles that are associated with this business that are not associated with the large dairy*."

In addition to Adizes' comment about operating capital being the mother's milk of an organization at the infant stage, Jawahar and McLaughlin (2001) argue the viability of the firm and subsequent movement to the next stage depend upon securing financial resources and gaining customer acceptance for products and services. Alternative farmers spoke of various sources of start-up capital including loans, personal saving, friends and family, and grants in some cases. The majority of the farmers in the study told recent stories of having invested in farmland. Farmer Kimberly speaks to the needs of start-up operations and how in her case it helped to have a loan from the Hawaii Department of Agriculture. Kimberly: "*Well you can only take an idea so far, then you got to have a little money to back it up. It depends on how creative you are. If you have your own money to start it, which is what I did, or if you are creative in finding money, or if you have people who are ready to back you up…we were lucky in all aspects, we had a little bit of all of that. There is a loan by the Department of Agriculture for new farmers. Only new farmers can apply. When I started it was only 100 000 dollars, but now it is up to 250*

000 dollars…one can apply for this new farmer loan to get the business started. I don't know what the startup costs are for a vegetable farm, or basil farm or a coconut farm, I don't know what those costs are, I would image a 250k can go a long way. The startup cost for my cost was quite substantial because of the equipment involved. The processing equipment…we built a creamery, so the equipment that went into the creamery was quite substantial, and the milking parlor, and the cows, and the feed. Yeah we had a big startup cost…so I'd say if you want to do something like that like making cheese or have a dairy, then you got to have some financial backing. I think the big step that they have already taken is that they increased that loan from 100 thousand to 250 thousand dollars. I think that is going to allow a lot of new people to get into farming."

Farmer Abraham shares his story of receiving a USDA farm ownership loan and having funding from his brother. Abraham: *"I was able to buy the land because I qualify for a USDA farm loan and because I had worked on a farm for three years previously in a commercial operation. That allowed me to get a low-interest USDA loan. Yeah. It's the farm ownership loan program. So I have a loan from the USDA that I borrowed, two hundred thousand dollars to be able to purchase this land. So that was nothing related to my brother or anything else. So I got the land and started facing the issues of building it out. I was able to get money that he donated to the non-profit for the capital improvements here. If it wasn't for my brothers donations I'd either have to go for grant money or a lot of things wouldn't be here, the cabins wouldn't be here. Things would probably be much more in a simpler state. So that access to capital has been very helpful."*

Farmer James is more skeptical to the ability of people to purchase land because of the high-cost of land in Hawaii. Even though he received his farmland simply by asking for it, as was discussed above in the social values section under spirituality, he thinks you have to be a millionaire to become a farmer in the first place. James: "*Yes, well going into farming, you know I often tell them, some of the kids say I'm going to go get a job then come back and get some land buy a farm. The only way you're going to buy a farm is to get a big heritance because that isn't happening anymore. The prices are just so dam high and there is really no outlet for small farms anymore, this is a lifestyle I know nothing else to do in my life. I will do this until the day I die because I don't know how to do anything else and that's why I am doing this. I know of so many people that come here and think they are going to farm and none of them are doing it because they can't. The financial incentive is not there unless you are really smart and have a*

bunch of money you know how you make a million dollars from your first share, you start with two [million]."

Some farmers start with a lot less than a million dollars. As mentioned before, some farmers started with financial help from the family. Farmer Anuhea shares some aspects of her start-up and getting support from her family. Anuhea: "*The reality is that I haven't made the money to purchase this property. My dad has busted his ass for 40 years working with solar renewable energy. I convinced him that food security and energy security is equally important. So I am appreciative of him and my mom to go out on a limb to try to make this happen.*"

Several farmers reported having benefitted from grants because they formed a non-profit corporation at the start-up stage. Alternative farmer Gerald shares a comments ab out how a research grant in cooperation with the local college helped him get started. Gerald: "*Part of what has helped us is that we start non-profit in 2003 so we have actually have done quite a bit of grants, we have a back yard chicken grant right now, applying for sustainable agriculture research and education grant. It's actually just directly through the USDA. That's the first time we applied for that one but we got money from USDA to build a hen house 3 years ago it was $20,000 and then this county research development for backyard chickens right now is $4,600 and then the club has gotten a couple of $1,000 grants and then this WSARE we are just applying for we got some decent chances at it the technical adviser has been very successful and is very supportive of sustainable agriculture… with our background already in the farming chickens and the grant is actually with only researching plants as a viable way of offsetting mainland imported grain for raising eggs we are going to do trials. So I'm super excited I would love for them to give us this because I think that we could solve a lot of questions for people about what you can grow and how you can mix it for it to be good*."

Farmer Lyndon talks about a grant that he had received in collaboration with the local university for his small-scale business (not being a non-profit organization). Lyndon: "*Yes USDA research and innovation grant. I wrote it by myself. It was half million dollars. It was spent so quickly. We bought this equipment. If you look at half million over four years it's not that much money. It's called Small Business Innovative Grant. That grant is wonderful. They give a little over 100 thousand each yeah…and then you pay the*

people and you buy some equipment and then it is gone. We've gotten other small grants like 20 thousand, three thousand...and so on."

However, several farmers did not think it would be sustainable to fund the farm with grants in the long run as was mentioned above in the discussion on social values and independence. Here are two comments from alternative farmers Abraham and James that illustrate that grants are not sustainable. Abraham: "*I have to qualify a little of what I say because of that money that I have received. But my intent with doing the farm in this way is that so it's not like a MA'O, you know it's really grant dependent because they are a social service organization. They're helping kids to help provide them this opportunity through these grants that they are getting to improve their lives and you know make a positive impact. But the farming is dependent on that larger context. My point in that is that I am hoping to create the farm to be self-sufficient in large parts so that it is not dependent on grants for its function. And that any grants that are gotten for the non-profit would simply complement*."

James: "*The government they don't, I don't know about that. I don't know what to say about the government. Anytime we try to apply for a grant or anything the only people who get the grants are the grant writers that go to college to learn and the big corporations and the so called non profits and that and the people who really really, it really bugs me all this talk about sustainability and farming it's a bunch of political bullshit. Nobody gives a dam about sustainability.*"

However, most farmers, whether for-profit or non-profit, did not rely on grants during the start-up period but rather for more expansion or programmatic efforts. The next comment from farmer Kimberly illustrates the constraints of grant money. Kimberly: "*Usually grants are written for specific things while a loan there is more flexibility on how to use without string attached…the nice thing about a loan is that you can use it for whatever you need it. You can put it towards working capital, future investment, and more equipment if you need… because we're in a low-income area; it tends to be rich in grants. It's hard though, but it is an unrealistic amount of money that you're getting as a grant because it doesn't really reflect what your business can do. So it's nice to get them and its nice if you need it to get to the level of producing, but the bottom line is that as a business you have to be sustainable, and you have to make product and you have to sell enough product to make your expenses. That's the bottom line. Like I said, a grant is nice to get you, if you need it, to get that point, but it is not something you can rely on year after*

year. You cannot rely on grants to stay in business. I think that is kind of where we are at right now… you know, we're always like "let's look at the grant, look at the grants" you can't look at grants for sustaining your day to day expenses. You got to look at them for expansion or for another level of production."

The following statement from Hurd (2018), a marketing specialist with the Hawaii Department of Agriculture, describes some of the challenges for farmers to attain grants. Hurd: *"Farmers know what they need to be successful. Grant programs help farmers be successful by providing funding. HDOA, as a pass-through (aka non-federal entity [NFE]), should help farmers be competitive to receive funding. This can be through scoring – additional points for farmers with no "backroom" to help them or by providing services such as accounting or reporting. HDOA has workshops to de-mystify the process. Montana had a Commodities Program that provided grant management and accounting services to commodity groups, with staff funded by the state (this was about 3 years ago and not sure still up and running).*

In reality, we do not have the staffing to perform that work on behalf of the farmers. Have thought the HFBF or HFUU or agriculture organization could seek funding to provide that service to the farmers. The Kohala Center does this very well! http://kohalacenter.org/ Federal grants have become more strict on rules and regulations and most federal programs are focused on outcomes – measurable outcomes – that require data, statistics, record keeping, etc. and HDOA, as the pass-through, must be sure the subawards are able to manage projects and have accounting skills. The rules, reporting, risk management issues favor universities, research facilities and agencies with qualified staff – however – because we want to provide assistance at the farmer level, with the intent of helping grow agriculture at the farm level, we do our best to encourage everyone to apply for an award."

Mrs. Hurd statement reflects what farmer Kimberly hinted about grants: it is difficult for any start-up to receive them because of the risks involved. As a result, farmers who receive and benefit from grants tend not to be farmers who lack their own funding but rather those who can show a record of accomplishment. Finally, some farmers also raised money online through Kickstarter crowdfunding and similar social media sites. Alternative farmer Barbara shares how a public campaign helped her fundraise for the farm. Barbara: *"Two-hundred seventy-one people gave me money through a Kickstarter. We raised twenty-four thousand dollars. So that community support, most of that is because I'm a big*

mouth…I'm opinionated, but I love a lot of things and a lot of people. I have a lot of presence on Facebook. Social media is IT for me. I live and die by Facebook. Our business would be nothing without Facebook."

From the monthly economic snapshot that was collected from six of the farmer operations, the start-up cost of a farm ranged from $25k to $800k with the average cost of $221k. Only one of the farmers used their start-up funds to purchase the land, the rest of the farmers either already owned the land before they started farming, or leased it privately or publicly. Farmer Zachary shares a story about his aquaponics farm that is on leased private property and being resourceful and also having help from volunteers. Zachary: *"I would say we put in about 25 grand initially. But were able to do that and to get where we are at because we are resourceful with things you know. All of those [aquaponics] beds down there, the first eight beds we built, were all cinderblocks off of the property, pallets from a warehouse downtown, the sides were shelves from the old Napa that went out of business. So before the liners, the plumbing, and the fenders, we built those things for next to nothing…with volunteers that were helping to clear the land, and borrowed equipment, and plenty of friends from all over the island that came to help us."*

In conclusion, a person can start a farm from scratch but people will likely be in need of start-up funding for land, facilities and equipment, and labor. Some farmers are resourceful and can start with less than 50k on leased land. However, most farmers will say that starting a farm takes more than 100k and up to 250k in financing without the cost of the land.

Alternative farming bring new and different challenges. At the infant organization stage, some challenges faced by farmers have to do with growing organic foods and deciding on what will be the focus of the alternative farm. What all farmers had in common was their motivation for creating an alternative and sustainable operation at the start-up stage. While some had to learn new skills from scratch of becoming a farmer, others interviewed were already farmers and transitioned from what they perceived to be an unsustainable model to a model that is more sustainable. Here are comments from farmer Abraham in Hawaii followed by farmer Barbara from Whidbey Island who refused to certify her sheep dairy organic but adopted organic methods. Abraham: *"That is because of the challenges that we've had in terms of learning how to manage the weeds, the bugs, and the diseases. Also sometimes*

seeds don't germinate, sometimes they don't grow well, sometimes they grow but they don't produce that well. So you know there's all these variables that happen. So the challenge with that is issues connected to the land, the challenges of having a tropical production system, being in Hawaii, and the weed problem is a big issue if you're not able to use herbicide. So that it but also that there is so much other works that is being done here that takes away from just the sheer Farming work…with organic stuff is just because of the environment, the growing conditions so I think there are more difficulties dealing with the fungus and diseases and the viruses and bugs there is no winter that kills everything off so that's more difficult and depending on where you are like the land here has been heavily farmed for 80 to 100 years by sugar production so the soil is very depleted its very compacted, its hard clay and you know and there is no organic matter so that makes it difficult I mean if you're not doing organic I think you can and if you have the right machinery you just kind of come in and rip things up you know plow which we are sort of doing."

Barbara: *"When we had 32, it was still about beginning genetics, so we would have 25 gallons per day. That's twice a day so that would be 12ish gallons per milking. So that's the beginning of lactation. Then as it drops back off you're near the end of lactation and it is smaller amounts. We had to follow all organic standards expect I refused to get certified because if one of my girls get sick I want to be able to give them treatment. I wasn't willing to sacrifice my girls' health."*

An experienced farmer once shared with the author that a farmer who can withstand several failures and still bounce back is a successful farmer. Most seasoned farmers have lost entire crops due to natural disaster or human error. Here is an example of some risks with investing in the farm from farmer Zachary who runs an aquaponics farm. Zachary: "*It's all different…sprouts are 7 days, lettuce is always a 4 week crop from seed to salad…watercress when it is really going we can turn that over every 3 weeks…and then our fish is like a one year turn around, we feed those things all year long. But it's kind of like putting money into the bank. Even if you're not making a bunch of money per pound, every week that you're feeding them it is like putting money in the bank. Unless, just like anything else, you know investments are risky. You know the air goes out, the power goes down, fish come out floating. We've lost 2,000lbs of fish in the last 2 years…either because of natural disaster, or human error…so 2,000 and then 6 bucks per pound…you know...Obviously it would help if we had another 12 beds of aquaponics down there. That is one limitation. But even the soil crops we have, we have problems with them. We're*

planting three times per week, but maybe we're harvesting once or twice a week. You know snails, rot, eight straight days of rain and now it's got mildew on it and looks like shit. Yeah so the weather has been tough on us. Summer was a killer, nothing has been growing for anybody this last summer."

Finally, some farmers are transitioning from an industrial form of farming to small-scale, organic and locally oriented farming. Here is a story from George who farms on Whidbey Island, WA. George: *"And so the other thing like I mentioned earlier is that my father-in-law died and he had an apple orchard in north central Washington. It's about one hundred acres of pears and apples. It has been farmed conventionally it's got a manger that still works there and it's got a crew. And so what we're kind of doing is expanding the business plan there. We're planting about almost three-thousand trees that are hard cider apple varieties and then honey crisp which is sort of a very high valued apple…the thing about the value added products is that we've been thinking about the integration: blueberries for juice and then juice from the orchard to blend apple blueberry juice and sort of doing fresh market juices…That other orchard, you know, it's been kind of a business. It goes up and down with the price of apples. But if we get over transitioning to organic there'll be a higher premium and so that's happening now. Anyway, there is lots of moving parts."*

Farmer Kimberly shares about the different reality of operating an alternative versus large dairy. Kimberly: "*the larger farms were not so sustainable. They had environmental issues that they had to deal with, EPA issues that were coming. For example, to handle the manure and the run-off in an adequate way. These are EPA regulations that were coming into the industry that had already been implemented in California and were going to be implemented in Hawaii over the next 20 years. A lot of those larger dairies would have not been in compliance. And the one that I specifically ran [had] 1,500 cows, it would have taken millions of dollars to be in compliance as were close to the ocean, rain, the run-off and things like that. So that was one of the reasons why some of the larger dairies saw the writing on the wall so to speak and made the decision to not make those large investments…the large operations like I used to run had 22 to 25 employees at any one time so I was mostly managing people, managing cows, managing the facilities, you know managing logistics of the business. When you have a smaller farm, you mostly do all of that yourself*."

Work arrangements and compensation. Jawahar and McLaughlin (2001) suggest enticing adequately trained applicants to join the start-up venture as employees is likely to at least require a competitive compensation package, along with the assurance that future compensation will be tied more closely with organizational profits. As discussed briefly above, most farmers in this study did rely on volunteers to start their organization but later developed compensation structures for employees. At this beginning stage, alternative farmers have to find innovative ways to resolve their need for labor including organizing work parties, operating with family members or contacting volunteers online through networks such as World Wide Opportunities on Organic Farms (WWOOF). Alternative farmer Jacob shares the story of how he started his farm with the help of a work party. Jacob: *"I moved to this property just to find a cheap place to live. I rented the house. I told the landlord:" we should do aquaponics here." And then, 1 year ago we decided to go for it. We had a work party, about 40 friends came and cleared the trash and started paving the way for aquaponics."*

Alternative farmers Abraham talks about the first three years being focused on clearing land and putting in infrastructure. Abraham: *"I got the land about 7 years ago and then it was just raw land, a lot of weeds so the first 3 years or so I've been doing a lot of clearing, put in some of the infrastructure, putting in all the irrigation, digging the well, building a few structures, starting composting, small garden and then we have been in commercial production since April 2009."*

Farmer Sarah describes some of the new realities that she had to learn as a new farmer and not getting paid. Sarah: *"Well we are new ... the definition of farm, I think needs to have some kind of income level are the farmers getting paid if not is it a real farm? So we are not quite there yet, not quite established yet we are still starting and maybe our practices would be different and maybe they will be different once we are bigger and more economically sustainable. So it could be that people that have that already understanding of what they need to do to start a healthy vibrant sustainable operation whereas we just kind of are still figuring it out… I'm sure we could produce more if we had more help. Also being true to our ideals of not wanting to put a lot of fertilizer in the ground is what's keeping our production low…so having enough land, having enough help to cultivate that land and maybe even having enough money for all the supplies that it takes as a startup."*

Farmer Jacob talks about not being able to hire paid labor because of the focus infrastructure development. Jacob: *"I would love to hire people to help us. But we simply can't afford it as a startup. Whatever money I have I have to buy the things that go into constructing and staging this farm. WWOOFing has been the only source of labor available to us. It has been a God sent to us."*

Farmers Sarah and Chester talks about operating farms with volunteer labor. Sarah: *"Having help with work. The source of labor for sure. With just the two of us and of course starting a farm is such an expensive endeavor that we haven't been paid and there is definitely no budget to pay anybody else so staying within the WWOOF system has made sense. So now there are other organizations like Attra, it has some kind of website, I don't know If its growfood.org that might be it, it seems to actually provide us with better candidates. Attra is some branch of the USDA that seems to provide information about sustainable and organic farming and it has two t's in it."*

Chester: *"We are not a wwoofer based operation, but wwoofers comprise a substantial part of our field labor. We cycle almost 80 wwoofers per year. If we were a commercially based operation, we would hire competent field labor…we believe that your experience on the farm should be an immersion you should be immersed in this place these people this process so that it becomes part of you. I appreciate the opportunity to have wwoofers on the farm because my life was transformed as a wwoofer on a farm in 1983."*

Farmer Arnold explains that his operations would not exist without volunteers. Arnold: *"Without any question that is the case because I could not exist without this, I would not exist. My farm in too big to be done by one person you know 8 acres and the coffee business and the B&B it would be impossible and recently I have also had two back surgeries so I can't lift much anymore. I had very bad luck with 4 wonderful WWOOFers...I should have had four and it took a while to new WWOOFers and during this time with my bad back, I processed coffee by myself and it was hell because I can't lift but never the less when I process coffee I constantly have to lift 30 pound boxes of coffee from here to there and it was very hard. I was a total wreck… I'm a old guy but I still work 50-60 hours a week, haven't had a vacation in years. So WWOOFers are really the central part of my existence, I wouldn't know what to do because we are not making enough money to hire full time or even half time employees, I don't have no employees.*

So it's a big farm, I have a two story barn and a four bed B&B and also a catchment system and all of that. So WWOOFers I have had for about 8 years."

There are a few online networks where farmers can find volunteers and interns. The website WWOOF.net is mainly for volunteers. Hawaii currently has 362 farm listings on WWOOF, 26 for Kauai, 39 for Oahu, 80 for Maui, and 217 for Hawaii Island. But there are other websites as well including ATTRA, Work Away, and Help X. Farmer Jane and Jacob share that they also rely on a website called Work Away. Jacob: *"Well we're on WWOOF Hawaii and WWOOF USA and that's mostly what we get. We're also on Work Away."*
Jane: "*WWOFers are lazy ass Americans. I switched to Work Away to get more Europeans*."

Farmer Abraham shares about attracting volunteers through HelpX. James: "*actually they are not just WWOOFers some of the people are through HelpX, it's another work exchange program I have probably got like 15% of people through HelpX*"

Farmer Abraham shares his considerations about the learning curve the first three years and not being able to pay people while building on the land. Abraham: "*Yea and well we have been doing it for 3 years and it's a steep learning curve so we are learning more, I think we have improved we know what we are up against more and kind of adjusted on certain things so that's why I can kind of try to scale down the amount of WWOOFers that we have and use people that we have more effectively. A lot of it when we first started really experimenting trying things out some things don't work some things do we are still doing a lot of building we are still clearing land opening things up so now that we have more of the land opened up, just maintaining it we could probably do with less people and plant more effectively.*"

Farmer Nicole from Whidbey Island, WA said that all the work on the farm is done by five interns and three family members; however, currently only two family members. She had many good interns because she learned about recruiting interns from running a summer camp for 10 years on her property. She learned from her experience how to select people that were a good match, how to organize them, and how to have them work toward her goals. The interns work approximately 40 hours per week and received a weekly stipend. The author asked her how she selected her interns. She said there is a steady flow of applicants that want to come to her farm. She does not have to go out and seek them. There is

indeed a lot of things for her to do and very little time. She said that one day she wants to be able to pay people and to be able to give out responsibilities. But as of now she can't afford to pay a salary even for a cheese maker. Nicole: "*our main challenge right now is that we don't make enough money to pay people and therefore we cannot expand the business.*"

As discussed earlier, farm volunteering though networks such as WWOOF is a form of tourism whereby volunteers get access to the "backstage" of a community by living and working on organic farms (Azizi and Mostafanezhad, 2015). Some have argued that farmers who host volunteers have an unfair competitive advantage because of cheap or free labor and Kimura and Suryanata (2016, p215) suggest "*...these programs may instead contribute to the perpetuation of extant problems that plague small organic farmers in Hawaii and beyond."* Research has, however, shown that hosting volunteers is not free and constitutes both added work and expenses for the farm host (Mostafanezhad et al., 2015). Moreover, an organizational lifecycle analysis shows that hosting volunteers is a coping strategy for a farmer to get through the start-up phase but can limit growth of the operation in later stages. For example, farmer Jimmy who entirely relied on ten volunteers in December 2012 had less than a handful of them in 2015, three years in to the operation, and viewed volunteering more as a trial period for people who want to be intern, apprentices, and eventually employees. Jimmy: *"Yes that's correct. Currently we only have 2 to 3 farm volunteers here. That's a quarter of our staff. Most of our interns and people in apprenticeships come through farm volunteering. As they volunteer they learn if they enjoy it or not and if they are good at what they're doing they will be offered compensation. I would like to move entirely away from farm volunteering and towards interns and people in apprenticeships.*

Some farmers in Hawaii have also suggested that volunteering on farms does not help support the development of a reliable workforce and farmers because they tend to benefit people from outside of Hawaii (Milne, 2016). However, volunteering does not exclude local people, as farmer Jimmy explains; in fact, locals can greatly benefit from living on farms and farmers, in turn, benefit from longer commitments. Farmer Jimmy further explains how the offer of internship and apprenticeship at his farm is worth more to local people compared to people from the mainland because of the high cost of living in Hawaii. Jimmy: *"This offer is worth differently for people that are from Hawaii compared to people that come from the mainland. For people to come from Hawaii they know room and board are very*

expensive already and they would appreciate this offer more than people that come from the mainland and are used to cheaper prices. They don't see as much value in the offer as some of our locals do."

Farmer James whom the author re-visited after four years shared a similar story that people want to stay longer and that he is paying with stipends. James: *"One brotha has been here going over three years. I think the people now are going to be here for a quite a long time. Because if you're smart, you see what we have going on here and realize they do not have any worries, the best food they have had in their lives. The work is very pleasant, inspiring and inter-educational. You couldn't find a better place…I pay them, they get stipends. $100 dollars per week. The program is 35 hours per week for room and board."*

Survey responses from volunteers also show a similar story of people wanting to be compensated more as the business and their responsibilities grow. Here is a response from Dylan who was a volunteer at one of the farms visited: Dylan: *"I think it is definitely OK for a farm to use volunteers as labor. It all begins as an open exchange, and the farm should outline exactly what they are offering volunteers, and what they expect from volunteers. Every farm has different needs and different accommodations, so if it was all listed clearly, volunteers can best select what will fit them. As for fairness, I think it should be no less than working for minimum wage. If the farm offers housing, that can easily be calculated to a monetary value. Same with food or anything else the host can offer. The work volunteers do should not exceed that standard."*

Nonetheless, research on volunteers, interns, and apprentices on alternative farms suggests that the relationship between farm host and worker is subject to exploitation (Ekers et al., 2016). Authors also refer to alternative farmers as self-exploitative (Ekers et al., 2016), which potentially blurs the meaning of exploitation defined as the action or fact of treating someone unfairly in order to benefit from their work. In most studies, the term exploitation or self-exploitation was evaluated for the state of the farm operation at the given time of the study, but not viewed as a step on the ladder of organizational life cycle and crucial passages. Approaching the issue of volunteers, interns and apprentices on alternative farms from a life cycle perspective gives a more complete understanding of how things change over time at different stages of development. That would include understanding activities such as alternative farmers' reliance on non-paid labor as a temporary phenomenon. Moreover, studies have shown that

there are non-economic benefits to living and working on farms, which is important given that the definition of exploitation of labor, in agricultural studies, has been based on comparing salaries of alternative versus conventional farmers (Ekers et al., 2016; Mostafanezhad et al., 2015; Mostafanezhad and Suryanata, 2018; University of Hawaii, 2019).

In this study, survey answer from volunteers and farmers show very few signs of exploitation. The author met with Jonas who is in his late 20's who had been a volunteer, intern, and an employee on small-scale farms in Hawaii. He describes learning new farming skills from his first farm work. Jonas: *"The first farm I was at, I got there and was offered a place to stay in exchange for work, it was a lose contract. Not even a contract, more like a spoken agreement. I did some work in exchange for sleep and no meals were involved. But we were able to have our own common cooking area and personal space to sleep at night. I was in a transition period just finding out what to do next, so I was in a place that I wanted to be. The farm was an incredible learning experience. The owner is brilliant and taught me so much about aquaponics. The first couple weeks I loved it. I had never thought more about things in my entire life, my brain was always firing on new ideas that I wanted to implement and so on."*

Jonas views volunteering different for young travelling folks like himself compared to older people who do not have much options in life:

Jonas: *"I also met some other people that were WWOOFing there, they were all older and one had a disability and another had a bad back. I was the young kid, the fresh back to help out. I saw that I got the more heavy jobs. I also saw the situation of the people I was working with, which was very different from my situation. They didn't have any other choice. It was a more dire situation for them than for me. I was out travelling, but they needed a home, a place to stay. What surprised me was there lack of choice. They didn't' have any other choice while I had all the choices in the world. This was something that I wanted, I wanted to learn more, I wanted to engage in this worldly experience, and learning about farming. But when I reminisce with my buddies that I was WWOOFing with, it's definitely not positive in their minds. As much as I try to help them realize that it was positive, they can't get past how they got used and abused. Also, I ended up leaving the farm because of a bad relationship I had with the farmers. While he was brilliant, he was an awful person and bad teacher."*

Finally, Jonas said, he ended up feeling abused and left the farm:

Jonas: *"I ended up feeling abused which is why I ended up leaving. I was not valued as someone who is really helping you. A respect that you were trying your hardest and you were doing everything you could is something that was missed. The demanding nature of the farmer to his volunteer was enough to make me leave. While I am up to hard work, being demeaned for doing something wrong is not something that I appreciate. As long as you feel valued for what you're doing and have a good mindset, WWOOFing is incredible."*

However, Jonas story of observing people whom he felt was abused was uncommon. The majority of volunteers and interns that were involved in this study did not mention feeling abused or exploited. Farmer James shares his views on exploitation of labor. James: *"Yes I know. And I am kind of curious about the definition of being exploited because most of the volunteers that have come to me, at least, it's of course completely voluntary, and they're looking for an experience that is enhancing their life, they're not…I mean… never have I had anybody claim that they are being exploited because obviously they can just get up and leave...and even they don't come from a sense that they are having a hard life or any other choice but being here. I did have a couple that I let stay here who were coming from more difficult circumstances and I was going to let them go but the guy asked me firmly to let them stay. So I let them stay…so I don't think we're exploiting, we're helping them out…"*

Many more comments from both farmers and volunteers in regards to their experience can be found in the Appendices 3. Comments from farmers can be found in Appendices 3, section "Labor considerations from small-scale farmers: volunteers, interns and apprentices". More intern perspectives can be found in Appendices 3, section "New people drawn to agriculture: understanding the inters search for alternative livelihoods." In addition, comments about volunteer expectations on the farm and if they were feeling like they were "used" can be found in Appendices 3, section "Volunteer responses from survey essay questions." Many people who were volunteering reached a moment in their stay at the farm where they had received what they wanted to get out of the farm experience and, if they were to continue, they wanted to be paid. A small survey and follow-up responses with farm volunteers show that most of them wanted to receive training and education in farming as a way of life (see Appendices 3, section "Volunteer survey responses").

On some farms, the request of volunteers to receive more compensation went hand-in-hand with the farm commercializing and paying more attention to making a profit. Chandra, an intern the author met on Whidbey Island who had been a volunteer and paid labor as well, shared some of her past experiences from working with small-scale farmers. She says that it feels very different to be part of a profit and loss operation compared to a farm that is just operating to produce food for self-sufficiency. Nonetheless, that is why she wanted to be an intern to learn about the farm business side of things at the farm where was currently staying. Chandra: *"Ah…there's just a whole chunk of things you don't have to worry about. You don't have to worry about marketing, sales, the packaging, your image doesn't matter because you are consuming it. You don't have to worry about health standards…so the business aspect is huge, and for me it's an educational component, something I had never thought about before but it was the main reason that I came here…I was interested in how business decisions were made by farmers. And you know it might…I realize that it does take this much time, this much…I'm here for a year…"*

In conclusion, many alternative farmers rely on volunteers at the start-up stage of their operation but as the farm business commercializes, farms rely less on volunteers, interns, and apprentices and more on paid labor. Volunteering becomes more of a trial activity for both parties involved to see if is results in a long-term work relationship. In some cases, as we will see in the next section, farmers choose to specialize in training volunteers and interns as their new marketing strategy.

Product development, marketing, and specializing. A distinct difference when you meet farmers at the start-up stage compared to five or seven years into the business has to do with how they arrange their marketing and products. Many alternative farmers' first experiences with marketing often take place at farmers markets, through community supported agriculture, and other face-to-face interactions directly with their customers. For example, alternative farmer Barbara shares why she liked to attend farmers' markets. Barbara: *"The things that did support me, I actually loved the farmers market. Some people don't, I did. It's our best margin. It isn't that much bigger than a wholesale margin. So for the time and energy you put into it, farmers that choose to go wholesale, I can see why. But for me that was part of my reward. I wasn't paying for it. I'm paying an average of five dollars to work at my*

dairy eighteen hours per day, seven days a week. So the least I could do was to go and meet people who loved my cheese and think what I was doing was awesome. That was my little ego strive. That was my "oh you're doing a good job"."

Alternative farming focuses heavily on marketing and especially direct to consumer marketing. Beginning farmers often engage in several modes of marketing and sale including farmers markets, CSA, on-farm sales, tours, and development of minimally processed value added products. To many farmers, and especially those who transition from conventional farming to alternative agriculture, doing one's own marketing present a challenge. Alternative farmers Kimberly says that marketing was the one thing missing from her original business plan and how future programs could improve farm business. Kimberly: "*I know that was something were we had to do on-the-job training, something that wasn't really thought through in the original business plan. The original business plan was about cows, milk production and production of products. And what was missing from the business plan really was how to do the sales and how to do the distribution and how to do the marketing. It was there is the background but it didn't take as important role as it should have...I think some kind of internship program where, for example, if you have a farmer that wants to grow tomatoes, maybe pair him up with an established farmer that is already doing it. Instead of like what I did, I had to learn on my own, I mean I knew the dairy part but not the creamery processing part. I think an internship at a processing or creamery would have been very valuable for me before I started this business. Unfortunately that would not have been available in Hawaii, we would have had to do it in the mainland. But yeah…maybe sponsoring an internship program, maybe paying the established farmer something to show the new farmer the ropes. And maybe sponsoring us to go to the mainland to spend a month at a creamery to understand how it works or how to build it or whatever…because you know we built it from scratch…like a grant for us to be able to do that. And even today, if there was maybe some grants from the state that says "you know we recognize you guys are going to do something special, we are going to give you a grant to send you somewhere where you can learn how to do it right so that you can come back to Hawaii and be sustainable.*"

Despite the popularity of direct markets, as farmers expand they will often change their approach to DTC marketing from relying on direct markets to more wholesale markets. Farmer Kimberly has been attending the farmers' markets on Oahu for a decade. She says that farmers' markets have an important

place but that wholesale markets are the real money maker. Kimberly: "*I don't know if it is a preference so much. I mean farmers market still have a place in our business because we are a small farm and we get to talk directly to our consumer and that is valuable because when you develop those relationships with people who follow you, who will go into the stores and buy your products that they don't see at the farmers markets…they still know who you are and they will go and look for you in the stores. So I think it is really valuable in that aspect. As far as a money maker, I've come to the conclusion that focusing on whole sale markets is more efficient for us because of our size…you know our employee base is not very large, so to have other people take on those roles so that we don't have to take them than we can focus on production, we can focus on quality, all the things that we are good at. And then having external company to take on the marketing and distribution makes sense for our company."*

Several farmers in the study recognized the diminishing return associated with farmers markets, which in turn made it a costly activity for them to continue. Abraham: "*Yes. You know it's gone down. We used to be in the steady $500 range per market. But now it's gone down to you know more like in the $300 dollar range. We did $500 this last market which was really unusual*."

Farmer Lao relies entirely on farmers markets' and says that the income from each markets has gone down over time. Farmer Lao: "*Markets used to be better, more busy, larger sales, but has slowed down. When Pearl Ridge first opened we would sometimes average revenue $2,500 weekly, now it ranges between $500-$1,500. We think it is because more competition inside the markets and more competition between the farmers markets.*"

Abraham shares his perspective about direct marketing through CSA and farmers markets. Abraham: "*All the other things like I love the CSA and I love the farmers market because of the ability to have direct relationships with my customers. But it is more challenging growing things…like turnips and radishes are an example…there's a lot more weeding involved with that, so…you know I will always want to have diversity in the markets and in what we are growing, but at the same time it may end up specializing in like 10-15 things.*"

Chapter 3, Table 3.1 shows that farmers' markets is one of the most frequent forms of marketing for alternative farmers who participated in this research. All but three farmers regularly attend weekly

farmers markets. Farmers Markets on Oahu are popular. To find out more about the markets, a survey was conducted in 2015-2016 at some the most popular farmers markets on Oahu. Table 5.1 tallies number of total vendors, farmer only vendors, and farmer and buyer vendors.

Table 5.1. Oahu Farmers Markets

Market	Operator	Total Vendors	Farmer only	Farmer & buyer	Day	Observation Date	Type of observation
1. Kailua	Bureau	46	5	3	Thu	10-Dec-15	In person
2. Pearl Ridge	Lovers	47	5	8	Sat	6-Feb-16	In person
3. Kakaako	Lovers	50	7	5	Sat	12-Dec-15	In person
4. Kapiolani	Bureau	70	13	2	Sat	11-Dec-15	Online
5. Kapiolani	Bureau	15	3	2	Tue	11-Dec-15	Online
6. Mililani	Bureau	22	3	6	Sun	11-Dec-15	Online
7. Blaisdell	Bureau	41	4	4	Wed	11-Dec-15	Online
8. Waianae	Makeke	29	4	4	Sat	30-Jan-16	In person
9. Kapolei	Makeke	27	3	3	Thu	30-Jan-16	In person

Notes:

1. Spoke to a popular small farmer, average of $500 or more per market, makes more money on sushi sliders than vegetables 2. Anonymous farmers comment: vendors that resell other farmers' vegetables have a better variety to offer customers and have more customers than farmers that sell their home grown vegetables

2. Largest produce farmer and trader reported an average income of $1,500 per market

3. One farmer reported income average $450 per market

On the island of Oahu there are two large farmers market operations: one is organized by the Hawaii Farm Bureau Federation (hfbf.org) and one is organized by private business Farmlovers Markets. In addition, the Waianae Community Comprehensive Health Center (WCCHC) organizes a few markets that were visited. Farmers constitute a fraction of the vendors at farmers' markets. Some vendors are farmers and buyers. A few farmers verbally shared their average income from farmers' market. Their income ranges from a couple of hundred up to $2,000- people who both farm and re-sell other farmer produce and products usually have more customers as their assortment of local food is larger. In a conversation with farmers' market manager Linda, the author asked some general questions about how the farmers markets benefit farmers. Linda said that at each market there are 40-60 vendors and that she would like 50% of vendors to be farmers. Linda: *"We try to have at least 50% farmers, that include*

flowers, and if they grow produce that they use in value-added development e.g. tomatoes in pizza. The customer base is roughly 75% local people and 25% tourist."

Linda has run farmers markets in other places as well. On the island of Oahu we are far behind, she says. Linda: *"We are very far behind as to the availability of farmers, land on Oahu is difficult. The farmers union is helping to grow new farmers between aged 20-40 y old- they are growing regenerative so I have high hopes for the future. It will take about 8 years to see some of the results of that."*

The author asked Linda how she assists farmers at the start-up stage and she told me that she goes beyond the farmers market to support them with multiple needs. Linda: *"We give them seed catalogs. We help them decide what to grow. We help them with packaging and marketing of products. Go Farmers- education initiative that the markets supports by exposing them to markets early on in their education. The challenge of the new farmers is to get ahold of land. We go and check the farms once per year. If a new farmer wants to enter the market, we go and walk on their farm first. We look at what they're growing and what they show up with at the markets. We encourage our farmers to have five different venues of sales, you can't just depend on the farmers markets. For examples, 2 farmers markets, 1 grocery store, 1 CSA, and one restaurant relationship."*

Some farmers might keep one aspect of DTC marketing but also move toward wholesale. Farmer Jimmy also said he was moving away from farmers markets and CSA to do more wholesale to restaurants.
Author: "*So are you basically moving away from more farmers markets and CSA*?"
Jimmy: "Y*es we will keep on doing the Waianae market which comes out to roughly $1,000 per month. Most of our business is through our restaurant clients sold at wholesale. We have a new event the farm-to-table dinners from which we split the revenue with the [our] café 50/50.*"

Most farmers in the study relied on a diverse set of market to not put all their eggs in one basket, so to speak. Farmers Kimberly and Arnold share their consideration for diversifying the income stream as a small-scale farmer. Kimberly: "*I think they add to it…I think where your wholesale falls short, you still have additional income coming from the tours…I think diversifying in this way in a small farm economy is important…I think putting all your eggs in one basket, so to speak, you could be in for trouble, unless your eggs are very popular. But people like us, our product sell well but there are weeks when things are*

very slow and then there are weeks when things are not so slow but anytime you can create addition income source that doesn't take away from your main goal which is our production. And tours don't take away from that…it almost become part of what we're naturally doing, I think that diversifying into that is a smart thing to do. It's additional income without the additional expense."

Some alternative farmers do not move away from DTC marketing but will instead specialize in one or two DTC activities. Farmer Anuhea talks about focusing on CSA. Anuhea: "*It's a waste reduction thing. Our farm the way we run right now is we have very small operation but we sell pretty much everything we grow, and we sell it all for retail value. Everything is through the CSA.*"

Farmer Abraham talks about three aspects of direct marketing at his alternative farm. Abraham*: "In terms of direct relations with customers we have three aspects of that. So we go to the farmers market in farm town, we do a farm stand here on the farm on Saturdays, and we have a CSA program. They have been working well. The farm stand is ok. It would be better to have more people. It's once a week, it's on a Saturday. There are some issues in terms of us being here behind the gates [you have to pass two gates to get to this farm] it's a problem because I have neighbors that are trying to keep the gates closed because they don't want people to come in here. More people here would rather have it closed than opened. So that's a bit of a hardship to get people to come here. We just put a sign out by the road that the farm is open. We haven't done any other advertisement except on our Facebook page… Well retail is the best. There is something to be said about bulk orders from restaurants. Our greens do really well over here so I'm actually looking for a bigger market so we can sell it at a whole sale price but do a larger volume.*"

Some farmers are good at matching the skills of their interns directly to DTC marketing. Farm intern Chandra felt enthusiastic about farmers' markets and having face-to-face interactions with customers. Marketing and sales were new experiences to her when she joined a commercial operation. Here is her comment about attending farmers markets. Chandra: *"Umm…yes I do. I love them. I love the farmers markets. As a consumer I wasn't a big farmers market shopper. It's unaffordable. Being on the other side and to see why products cost as much as they do. But after this it doesn't make a bigger farmers market customer- probably not. Because I still don't think I can afford that and definitely not the products we make here. No way can I afford to buy that... I'm not a sales person and it's almost like I don't want to*

be. As a vendor at the farmers market I have never felt that our farm has been seriously into sales. We are good at customer service, very helpful, very…you know want to really love our product and to talk about it. But we're not like pushing our product, but that's because we don't need to. We have a loyal following, we don't have to be like "oh please come and try our cheese"…we don't need to, we sell our product."

Nevertheless, after a couple of years of being in operation and before the alternative farmer arrives at their expansion phase, they select and start to specialize their marketing strategy in one way or another. During this time, farmers narrow their marketing, financing or laboring activities in ways that streamlines their income. Some focus more on wholesale accounts with stores and restaurants as we saw with farmer Jimmy. Others specialize in agricultural tourism or agritourism which can be defined as tourism activities focused around an agricultural based operation. For many farmers in Hawaii agritourism and farm tours is an important educational aspect that intersects with many other forms of direct sales. Some farmers who prefer tours to other forms of DTC marketing have said that it is like "*bringing the farmers market home to the farm.*" Here is comment from alternative farmer Kimberly. Kimberly: *"but right now we're focusing on tours as another sort of value-added product…so you have a space that you're paying for and you might as well utilize the space to make enough money…to survive. So tours seem to fit in to what we already do, and another reason to hiring out your marketing and distribution, although it is going to take a little bit of your sales, is actually beneficial because tours is direct sales and there is no middle man…people come to your farm, they pay to be on your farm, you give them the tour, and they buy products on the farm. So that kind of a farmers market, direct sales approach, without paying the farmers market fees, and the gas to get there and everything…so you're on the farm, it just makes sense for farms to do the farm tours so you don't have to go anywhere to generate that income."*

Farmer Calvin explains that there is quite a demand for tours. Calvin: *"We have tours. We have a tour company come through our farm 35 weeks out of 52 and we are getting paid $450 bucks for one hour, just to explain to them what we do."*

Some farmers feel so strongly about their mission to educate and train the next generation agricultural workforce that they want to offer internship classes on their farm. But instead of the interns assisting

farmers to reach production levels and sales that make the farm economically viable, the internship become a new market specialization for some alternative farmers. In 2011, the author visited alternative farmer Thomas who was taking his farm operation in the direction of specializing on permaculture internships as a new service as opposed to a strategy to cope with cost. The author met again with Thomas in 2014.

Author: "*I wanted to ask you a follow up question from three years ago. You were redesigning your volunteer and intern program. You wanted to charge for interns and volunteers and, in turn, teach them permaculture living. How has that been going?"*

Thomas: "*Not very good. We have had people come through and pay for their learning here, but it takes so much of our own time that we can't do other things. The model isn't working. We would need to do it full-time with 8 interns at the time for it to work..."*
Author: "*I see, are you finding that people want to come and learn and pay for that position or not?"*
Thomas: *"Yes, it's our own ability to teach them while working on our own operation that isn't working out."*
Author: "*And so you had people do that then?"*
Thomas: "*Yes*"
Author: *"How many people would you need to support yourself?"*
Thomas: "*we need about 7-8 people at the time."*

Between 2011 and 2014 farmer Thomas had tried out his strategy of making a majority of his income from people staying and getting education on his farm. He now knows the critical level of at which this new activity would sustain him in a way that he would not have to additional income. He was asked again what he thinks he needs for the farm to prosper. Thomas: "*We need a whole community and we don't have that. We still have problems allowing for freedom at the same time at having rules on the property. We treat everybody equal, we eat together and we eat the same food. I have visited communities like this in Cambodia and Thailand, I know it works but I also know it takes an interconnected community to do this. Who is going to take care of my kids if I pass away? We have to rebuild the community, the social fabric. The problem is really that the structure of community has been so broken here in America. The last one we had was the extended family and that too is now*

disappearing. We need to completely start building that social fabric again, those relationships and interdependence, and that is what we need to do to have this farm prosper. It's about building long-term close knit relationships with each other and the neighbors around us."

Other alternative farmers faced situations similar to Thomas, and their mission is not just about growing food but also contributing to other changes in society. While some alternative farmers in this study were going in the direction of specializing on farm training and community building as a new marketing strategy, the strategy was not as common as those who pursued scaling-up production. Most farmers were working to make the farm economically viable, breaking-even and are often in the pursuit of increasing production on the farm. Many of the farmers relied on building community space whether it was for workers or for customers. One of the farmers in the study pursued a hybrid version of offering ecotourism services on the farm to supplement income during times of low productivity seasons on the farm. The summer in Hawaii is usually a period of low productivity. The author revisited alternative farmer Abraham after three years and read shared a passage from the original interview transcript three years earlier about increasing capacity to house workers on the farm. Abraham: *"The labor is needed on this farm. I am going to host volunteers. They will be powered with solar and cost roughly 4,000 dollars each to build…"*

The author's comment three years later: *"It's very impressive to see the dwellings looking just as you describe them in front of me."*

Abraham: "*Yes the cost ended up being more than that. It cost at roughly 8,000 dollars per cabin. We built three cabins. Well the original idea of days was to provide a place for interns who take a step-up from volunteering in terms of commitment. So these are people that have some really good skills. They would have more responsibilities on the farm. They would stay on the farm for up to a year they would receive a stipend and that improved shelter in addition to what our volunteers receive."*

But Abraham also shared that the cabin can have dual purpose in a flexible way for both workers and potential overnight guests. Abraham: "*yes absolutely. And I think in two different ways. Either for having volunteers or farm workers being able to live on the farm. That's one of the most obvious value and in some ways the biggest need for a farm. I mean if farms have the land, you can put up these small*

structures for people to live in. Whether you have them for farm workers as included in the deal of helping out on the farm, because half of people's income sometimes will go towards rent or mortgage. So having the housing as a value for farm workers or as a rental. As a thing that you can rent out as a supplement for your farming operation."

Abraham also shared information about the income and expenses of investing in the cabins. Abraham: "*I have two cabins and a studio. The cabins I am renting out $60 each per night. There's a twenty dollar cleaning fee. And then the studio for $100 dollars per night. There is an extra charge for having more than one person in the studio. The demand is very good. We have about 80 percent occupancy per month. I have had it up for 5 months now. As soon as I put it up I have had people jump on it! I can probably make $4,000 per month on the housing."* In other words, extra housing on the farm can supplement the monthly income needed to keep the operation running. However, not everyone has permission to build cabins, especially farmers who are leasing public lands. Yet it remains a good strategy for farmers with privately owned lands.

On another DTC operation, alternative farmer Anuhea combines similar activities of B&B and on-farm CSA pick-up, which allows her to bring the market home, so to speak, and more time on the farm. Anuhea: *"Because CSA is the nature of our marketing, people come to the farm to pick it up. We're not delivering or going to the market ...I'm trying to figure out a model that works on this farm Yeah I don't know how farms factor in vending and staffing at multiple farmers markets, not to mention the transaction cost. I think farmers don't think about the costs of markets... We run a vacation rental that runs the farm right now. The house on top of this hill is a cash cow. I couldn't afford agricultural land on Oahu without having it that way. I am a member of Hawaii Agricultural Tourism Association…they're working on trying to make farm B&B's legal and permitable and I definitely have concerns with vacation rentals being on farms around the state that's not the motivation. But one might say that we are a hobby farm or a Gentleman's farm because we got some plants in the middle of the field and sure it's pretty but I don't know how else to do it at the moment.*"

More comments from farmers about direct marketing including lessons learned, types of direct markets, special events, value-added production, and price setting can be found in the Appendix: Chapter 5 in the section on direct marketing considerations.

Emerging Growth Stage. The growth stage follows start-up phase and, by this time, the firm has achieved a degree of success; the previously dominant concern for survival has largely been overcome, and the firm is actively seeking and engaged in expansion opportunities (Jawahar and McLaughlin, 2001). Adizes (1979) calls this the go-go passage:

> This stage is analogous to the baby who can finally see and focus. The whole world opens before its eyes. Everything looks like an opportunity, and only in retrospect does baby realize that some opportunities are threats that should have been avoided. A Go-Go organization moves fast, often makes decisions intuitively since it lacks experience, and almost every opportunity seems to become a priority. Its interest span is short. It moves from task to task trying to cover them all simultaneously. One major danger a Go-Go organization faces is that of spreading itself so thin that it might run out of capital, and a major setback might "do it in." Another danger is the personification of its managerial process-the founder's trap. What allowed the Infant organization to survive a hostile environment is the motherlike commitment of its founder. While this commitment is indispensable for the survival of the Infant organization, it becomes dysfunctional after the Go-Go stages. The loving embrace becomes a stranglehold.

Similar to the comment of Adizes (1979) about short interest span of the organization and spreading itself thin, some farmers pursued strategies that did not create the desired results. While several comments from the earlier section on product development, marketing and specialization fit Adizes (1979) description, it was also common that people overestimated their ability to operate agricultural tours while scaling-up production trying to cover all opportunities at the same time . Farmer Kimberly shares the connection between her specializing strategy of farm tours and breaking even which eventually did not work out. Kimberly: *"At this time, no. But my goal is to be able to bring in enough tours to pay a substantial amount of our overhead cost. I think that that is a good goal to achieve. If our tours can pay for our electricity cost, water bills and lease cost, then I think that is a huge boost to the all-around business. Because now we can focus on production, and it is not so much reliant on how much cheese did we sell this week and are going to be able to pay our bills? Once you get your basic bills paid by this additional income I think the rest is you know…can you put this money in expansion or can you fix equipment that you have been putting off…"*

In a similar fashion, alternative farmer Jimmy overestimated the opportunity of having tours on the farm. While explaining that a Disney resort had recently moved into the neighborhood and added tourist farm tours, the opportunity ultimately was not very significant. Jimmy: *"One good example is the Disney Aulani thing. We recently built it up with them and now were just waiting for them to send people*

here through tours. We have a contract with them that officially started April 1. They will bring buses of people here and we're going to give them a farm tour and they will eat in the [farm-to-table] Café. The general idea is to bring more people through tours and to have the store up and running so that we receive income from the tour's and sales in the store. Agri-tourism is definitely going to be one of the strategies that we focus more on. And for the tours we need to either hire someone extra or redirect an existing staff to be more in charge of tours. So far I have been the one that is in charge of tours."

Part of the challenge with agricultural tourism, as farmer Kimberly explains, has to do with the seasonal nature of tourism. Kimberly: "*The reason is that we have not yet reached our production goals that we need to reach. Some months are better than others, but there are months when things are pretty slow, and like… tourist off-season we can see that our sales go down as well. During those months there is definitely in need of some extra incomes.*"

Scaling-up, breaking even, and investing in farm infrastructure. Typical problems faced as sales activity steadily increases are stabilizing production and product (and/or service) reliability, matching demand increases, maintaining cash flow, and formalizing organizational structure (Jawahar and McLaughlin, 2001) . The emerging growth stage is the period in which significant new investment is likely and the number of employees, customers, and geographic contact is expanded. A common theme for all the farmers in this study was their plan and pursuit to expand their operation was because of high local demand. As mentioned above, this research was conducted partly in response to understanding how to incentivize small-scale farmers and local food production in response to local, state, and federal programs (Martinez et. al, 2010; Low et. al, 2015). Demand for local food far outweighs the supply and thus local farmers need to scale-up production (Day-Farnsworth & Morales, 2011). From the interviews with farmers, expanding and increasing production can be challenging. What follows are a few comments that are concerned with the challenges facing small-scale farmers in Hawaii. Some of these are recurring themes that come up later when discussing specific challenges of marketing and labor. A better documentation of challenges should ultimately assist policy efforts to incentivize increased local food production in Hawaii.

Farmer Richard shares why increasing crop production is not as easy as it may seem. Richard: *"People would always tell me just grow more crops and you can sell more food and make more money or grow*

coffee and I say ok yea I could do that so I'm going to put another acre for vegetables in, now I need another acre of fencing and I need another acre of irrigation, and we had to pump water we were all on catchment so the upper houses we tied to we put a 10000 gallon tank at the top of the property, we built a pump house down below because the county water we bought a 1 inch water meter which cost $10,000 from the water department and their delivery tank was about 50 ft higher than the bottom of our property. Well we were farming at the top of the property so the water department couldn't even get the water up the property so built the pump house with a small 2,500 gallon holding tank that we put on a timer and we could pump water up to a holding tank at the top then gravity feed back down. I told them ok I add an acre of vegetables, now I got 10,000 gallons of water it would only get delivered from the county, there was a ceiling of how much water we could actually get in a 24 hour period and pump up and I would have to full holding tanks, well now I need another holding tank and then I need more irrigation and then I need more labor then we need more harvesting and processing space."

Most farmers connect the challenges of scaling-up to the availability and affordability of workers. The author asked farmer Sarah if she was expanding production.
Me: "*Are you interested in expanding that at all.*"
Sarah: "*It's a staff issue*"

Farmer Abraham share about the community aspect of farming and how increasing production requires first expanding the capacity of the farm to support a community. Abraham: "*I mean this is my home and a community where a lot of other people live. There all of the issues related to basically I'm building up a site where people can live. For example, the waste water, the septic system, the electrical system, I'm constantly having to add more solar panels, more equipment, expand outward. We're completely off the grid. Both in terms of electric and water system here, we are underdeveloped. And also we need more pressure in our lines and to have a reliable pressure systems both for our personal use of water, but also in the fields themselves. The agricultural water we have from the state is more pressurized but you can't use it in all the crops. So there's all these interconnected things that we constantly have to work on in addition to the farming which is an aspect of our community living. And that's part of why we can't expand to enough markets and why we don't have enough produce.*"

There were generally two major periods of investing in the farm operation: one at the start-up stage and one at the growth stage. Approximately, from year three to seven many farmers would invest in their farms to increase their production capacity. While we saw some example of people investing in houses to increase production capacity, other investments included land clearance, water main and irrigation construction, purchasing tractors, washing and refrigerated storage facilities, purchase of vans and cars. Moreover, some farmers purchased additional lands in their growth stage that usually meant investing in more clearing, equipment, infrastructure, and contract labor. Several farmers were in the process of expanding. Anuhea: *"The farm was 3 acres for the three years. And since last year we are leasing this lot next to us which is another 17 acres"*

Alternative farmer Jimmy bought more land four years after starting. Jimmy: *"I started farming here in 2012 on 7 acres cultivating 2 [acres]. In 2016, we bought 16 more acres. Currently we're farming 10 acres half in vegetable production and half fruit orchard. The goal is to lease another 15 acres in 2019."* From the numbers shared by farmers, expanding the farm requires lots of investment. For example, alternative farmer Jimmy shared that he purchased 16 acres in 2016 on the island of Oahu. The cost per acre was roughly $40k and he also mentioned that today (in 2019) it would be more expensive.

Image 12- Expansion of washing and storage facilities at alternative farms as seen on this picture, requires investments but also results in more local jobs in the construction industry as well as increased capacity for food production.

The land did not have a water meter and a required water backflow prevention instrument that cost an additional $70k just to install. Those were the expenses involved before any clearing and cleaning of the fields had been done and before any irrigation pipes had been put in place. Farmer Jimmy explained that in addition to purchasing the land, it cost im approximately $1 million for infrastructure improvements and contractual labor or $60k per acre for 16 acres. The numbers corroborate with other farmers who are in the expansion phase. For example, farmer Jackie from Kauai spent $150k on tractors, tools, irrigation, solar panels, contractual work, and fencing on her three-acre farm, which is on average $50k per acre.

Many of the farmers in the study would report that they were breaking even sometime after seven to ten years but it also varied from farm to farm. Alternative farmers Lyndon expected returns at year seven. Lyndon: *"Right now it's not profitable but this year we will make it profitable. We're on year 7 now. So for 6 years there's no profit. It's because the learning curve is very steep. Very slow learning curve. It takes a long time to learn."*

Farmer Barbara who used to run a goat dairy on Whidbey Island had to close down. Her stories are a good example of what it takes to start a farm and when it might be better to stop farming. She shares her view on breaking even. Barbara:" *The farm has never done anything…we have spent five-hundred thousand dollars on this farm. We have spent our retirement and our saving on this and that is why we decided to close is because now we are to the point where we don't have any more to give and we couldn't break even.*"

Moreover, Barbara shares two reasons for why she did not break-even and had to close. Barbara: "*And there's two reasons. I actually did a 180 page business plan when I started this. I come from the business world. I didn't enter it lightly. And I knew I could never make as much as I did in the professional world doing this, but I thought that we could break-even and pay an employee. And it turns out that when we had an employee we lost thirty two thousand dollars that year. Twenty-six thousand of that was salary and taxes. And without her, our production fell of course. So when we went to a part time employee we only lost twenty grand. And when we went to no employee's we only lost 12 grand.*

Yeah. So…for me though, I was working four years. I worked a minimum of eighteen hours per day, seven days per week. I averaged three or four hours of sleep per night. We were actually killing ourselves to go bankrupt just to sell cheese. Two things. And because I had a very thorough business plan I know exactly where the failings were. One of the failing was that at the time I did my research hay was eight dollars per bale. In my spreadsheet for it, I counted on it going up to twelve dollar per bay at some point. Then China bought all of the hay of the Pacific North West. And our hay prices went up to eighteen and twenty-four dollars per bale. So feed cost…and the thing was that according to my plan I was scheduled to go with organic feed in the third year, but I went with organic feed from day one. And that is a significant cost difference. So I chose to go organic and hay prices went crazy. The number one thing that affected my fiscal success was my feed cost. My number two was also my feed cost but for a different reason. I'm a sucker. I am too soft. I have all my retired girls. I keep way too big of a herd. I have a really hard time selling my babies. When you're milking twelve goats and you're feeding fifty, you're not going to make a profit. That's just stupid farming, and that's all on me."

Farmer Nicole from Whidbey Island is still farming but is not breaking even. Nicole said because they are part of an animal welfare certificate they cannot have the sheep mate unnaturally. In other words, they cannot do what others sheep farmers do which is to simulate breeding so that milk is produced the year around. As a result, this farm has a seasonal production of cheese and a long period of time approximately 3 to 4 months of low to no production. The farm is also more than 100 acres but most of the area is forested and there is only about one acre of grass for the sheep to graze on. That means that farmer Nicole has to purchase all of the food and hay that the sheep's eat. On top of that, the company has chosen to feed its animals with local feed. Therefore she buys hay from Whidbey Island which is also more expensive than sourcing hay from larger producers outside of the island. Farmers George and Laura are also not breaking even. They shared a comment about being in the process of calculating the cost of labor even their own involvement. George: *"We haven't yet. The first year and a half it was using savings and buying equipment. So in terms of paying off equipment, we're not doing that yet. In terms of breaking even, you know because we're contributing so much labor, this year what we're going to be doing differently is counting it all, so that we can monetize it. You know like if Laura hurt her back, how much it would cost to replace her. So that is this year's project."*

Farmer Jimmy shared in 2016 that he was not breaking even. Jimmy: *"Our goal is to not increase cost as we increase production because were coming from a long period of having built the capacity for the current stage. What happened first was that $10,000 was our break-even. To get to the $10,000 point we more than doubled our expenses. Now we can't increase our expenses anymore. We can operate the farm with the staff that we have so we have a few strategies to not increase cost."* In 2018, farmer Jimmy broke even and in seven years he was able to transition an educational farm with an annual income of $25k to a midsize farm with a yearly revenue of $500k.

Building a reliable workforce. During the start-up phase it was important for the organization to offer its employees an attractive package. At the growth stage, proactive attention is likely to be devoted to employee and supplier stakeholders in order to address the need to build a quality workforce and to obtain resources to accommodate such rapid growth and expansion (Jawahar and McLaughlin, 2001). While many alternative farmers rely on volunteers at the start-up stage, later on volunteering becomes more of a trial activity for both parties involved to see if it results in a long-term work relationship. A long-term relationship between the organization and its workers becomes a more important feature of growth stage. In 2019, seven years into his farm operation, Jimmy's farm has grown to a mid-size farm generating approximately half million dollars per year with a workforce of twenty employees: 2 volunteers, 8 apprentices and 10 full-time paid employees. He explains some of the considerations for building a more reliable workforce. Jimmy*: "First of all interns and people in apprenticeships are committed for a longer time period. You don't have to retrain them as you have to with new volunteers. You don't have that constant change. You know as soon as you have people come and go there is a disruption in the workflow and how people work together. And then it's always a challenge with farm volunteers. Even if you manage them and do everything right the person could still be completely not what he or she said they were. They might also have commitment issues, and you can't hold them accountable because they are volunteers… I preferred them to be volunteers before interns. Sometimes I asked them to come and volunteer for two months so we can have a trial period and see if it's a good match for the intern program. They may think they want to do it but it's good to experience it before both parties commit to a longer stay."*

Farmer Jimmy explains that he is now paying people based on their time commitment and describes the intern and apprenticeship programs at his farm. Author: *"What have you had to do as a farm to keep the*

people that do well here?" Jimmy: "*Pay them. We've had to start to pay them. We used to pay our dedicated members $100 a week and now that has changed to $800 per month. It is not a lot but it is what we can afford for the interns that we want to keep. Interns that are here for six month commitment get hundred dollars per week. After that they can move on to apprenticeship which will give them $800 per month for a one year commitment. We pay for the commitment. At this farm you also get room and board. We estimate that the room and board is worth roughly $1500 per month. It includes a room sometimes shared, and it includes three meals a day that has been cooked in the Café."*

One of the interns at Jimmy's farm explains the same structure for compensation. Michael: *"The way this place is structured is that you get paid for commitment which is radically different than anywhere else I've ever been. Here you get paid more for how many years you commit. You get paid nothing for two months. You get paid a little bit for six months. You get paid a little bit more for a year. And I think there is even one more step beyond that.* Both Jimmy's and Michaels comment illustrate to cost of educating and training farm workers on the farm by alternative farmers. If people want to stay longer, the farmer is more willing to compensate them because the efforts they put into training people do not go to waste. However, if people only want to stay a short period, more as a tourist, they do not receive compensation. There is an increased interest among people who want to experience commercial aspect of alternative farm operations. Chandra, an apprentice at a Whidbey Island farm, said that the experience of working at a commercial operation makes you feel more invested. Chandra: *"you feel invested in a different way. You feel a little more responsible for contributing towards that financial part of running a farm.*

As discussed earlier in the social values section, alternative farmer Lyndon strongly believes in employees having an acceptable living standard. Here he explains the connection between taking care of employees and a long lasting business operation. Lyndon: *"Yes they have all been with me for a long time. Yeah I think this need to go out there because getting foreign labor and paying people slave wages is unacceptable for farming. So then you can lower the price of the product. Or you can get a bigger profit- it is not acceptable. We're here for business, and we want the business to last long time and then you have to take care of the people, planet and profit. Otherwise you should not be in business."*

Moreover, besides creating a reliable workforce for themselves, some farmers suggest people who commit to stay on the farm for a longer time are likely to start a farm of their own. While this development does not necessarily help the alternative farmer who trains a reliable workforce, it helps us as a society to create new farmers. In that sense, an alternative farm can be an incubator for growing more farmers not only more farm workers. Farmer Sarah and her husband first met each other while volunteering on organic farms and believe that a portion of volunteers want to become farmers just like they did. Sarah: *"It seems to me that some WWOOFers, there is that group of WWOOFers who are actually considering becoming farmers and it's very exciting as a trend to see that. Yea it's exciting to me. Farming is now a possible occupation or it's looked at as more of a lucrative occupation for young people because of organic farming being a whole different market it's not a commodity."*

Farmers George and Laura share about an important experience that Laura had with managing a large CSA program before she decided to become a farmer herself and purchase a farm. George: *"She had CSA in Idaho…"*
Laura: *"But I also worked on other organic farms there we had over a hundred people CSA where we also had interns and connected with a program at the University. I started as an intern but then I was paid. And so there is a farm manager, he was there for a long time."*
Author: *"Did they [interns] make a significant impact?"*
Laura: *"Oh yes absolutely. But because it was a University project we also never undercut anyone else's prices…"*

Farmer Gerald shares about his experience as an apprentice on a small-scale farm in New York. Gerald: *"when I went to an apprenticeship in New York how it worked best was they were just out there farming it was either Mr. farmer or Mrs farmer with the apprentices all the time, so they could show us and keep an eye on us and be doing work themselves."*

As we saw with farmer Abraham, extra housing on the farm can supplement the monthly income needed to keep the operation running, and be a benefit for worker who commit to stay for a long time. Not everyone, however, has permission to build cabins, especially when farmers are leasing land. Farmer Kimberly is on a private lease. She was asked what type of program could help her, she said some type of internship co-arranged with the state. Kimberly: *"Yeah I think there is a need for labor*

subsidies. I think there is a program where subsidized labor where the State pays part of the labor, if you hire an individual that is on welfare, I think, the State will pay part of the labor, and then the farm would pay part of the labor. I think that is a good program that can be expanded upon or be made specifically for farm labor. So that could be a State project or a privately funded project where you have farm labor and the farm labor is subsidized by this entity…whatever it is…So [right now] we can't hire any more labor because we're limited in our resources, but if I could hire 2-3 more laborers than we could definitely focus better on what we need to do or just increase production. The bottom line is that we can increase production if we had more labor. Something like that I can see privately funded for specifically farm labor."

Developing value-added products. At the growth stage, another key consideration is delivering a quality product (Jawahar and McLaughlin, 2001). For alternative farmers, development of minimally processed value-added production is a common theme especially in the growth stage. As mentioned earlier, about 63% of farmers in this study had developed their own value-added products from raw ingredients that they produced on the farm. Products varied from including dairy, kale chips, supplement, pickles and many more. In 2017, 567 (7%) of farmers in Hawaii engaged in value-added production with an average income of $189k annually (USDA, 2017). In other words, farms that developed value-added products are among the top earning farms in Hawaii. For example, farms with value-added products generate on average $170k more annually when compared to direct sale farmers (USDA, 2017). Alternative farmer James describes some of his value-added products. James: "*…we send a pallet of bananas and oranges to this lady that's doing baby food and we sent a pellet of sugar cane to Oahu, my wife has 2 daughters that live on Oahu and one of the daughters has a degree in nutrition, she has a little business and so she uses a lot sugar cane in her business. We grow a lot of kale chips; we make a lot of fruit leather. She just made a fruit leather out of turmeric and ginger and chocolate. It's off the charts. She has been making fruit leather out of these bananas that we grow, purple 'Uala's along with the coconut and most of it goes to the café and we have all the health food stores in Hilo and Puna, we have a 20 year relationship with them. They know that whatever we grow they want it.*"

Alternative farmers Kimberly comments on the type of value-added products they make at her dairy and creamery operation. Kimberly: "*…we make cheese. Artisan style cheese in small batches. We make butter that is all hand churned butter. Our products are all from grass-fed dairy cows. So we try to let*

people know that this is an all-natural process. We don't add any specific preservatives, or anything to our products that you would find in commercial products. We don't add food colorings, we don't add preservatives, stabilizers, we don't add things to make our products thicker, and we don't add any of that. All of our stuff is as natural as it can be. So butter, cheese, yogurt...buttermilk, Greek yogurt, hopefully soon ice-cream…we have tours, we have wine and cheese events, and we have special events if people want to book special events."

Furthermore, Kimberly suggest that while it is hard to compete with similar products that are made cheaper, she develops value-added product with a local edge to it. Kimberly: "*But to stay competitively priced is really tough in Hawaii because the price of your raw product is already higher. And then when you take that raw product and make a finished product, you just end up with a higher cost product. I think that is the reality of almost anything grow in Hawaii or manufactured or made in Hawaii. So we have to make our product more special. Like we make cheese. I don't really want to make cheddar cheese and compete with the cheddar cheese market because you can buy cheddar cheese for pennies. So I want to take my cheese and make it more special so that people are willing to pay more money for that cheese. So for example, I am going to put Hawaiian chili peppers in my cheese. Now that's a special cheese that you can only get in Hawaii. Kona coffee or you know…anything to make it just one step above what anyone can find in the stores so that I don't have to compete against that. F: Yeah. You're taking advantage of that it is a local product. And it is a value added product, but even one step further. You want to make it local. Because like I said, I can make local cheddar cheese, I don't think I can sell a lot of it because it is not a special local cheese, it's just a basic American cheese and people can buy it cheaply. So why would they by my cheddar cheese unless mine is special. And it's special because it is made in Hawaii, but it is not as special. I don't know…that's my opinion.*"

Furthermore, George talks about the process of getting the product in with Whole Foods and organic certification. Value-added products often require a higher level of food safety standards including certified kitchens, traceability protocols, and a good customer relationship. George: "*So this is the packet I put together for Whole Foods. We have to meet requirements from Whole Foods. They have a very stringent policy. Our bar is all organic ingredients. Unless you make it in a facility that is certified organic, then you can't put organic anywhere on the bar. So the syrup, it's got all very few ingredients*

and it's all organic, we send it to a co-packer that has an organic facility and then we can have organic on the label."

From the HFUU survey, people were asked if they would like to learn something new in farming and value-added production was one of the most popular answers. Seventy one percent of HFUU members want to learn new skills in relation to food production, processing, marketing, and farm planning.

Development of farm based networks and cooperatives. Bryan and Bharath (2016) show in figure 5.11 that strategic partnerships can develop at the mature phase of an organizational lifecycle after infrastructure expansion and before impact expansion. There has been increased involvement of alternative farmers in governance structures to learn and promote a climate friendly agriculture with farmers' participation (Andree et al., 2019). There is an increasing interest among small-scale alternative farmers to build relationships, networks, co-operatives, and other close-knit networks with one another to mediate the risks of markets fluctuations, and to collectively bargain for feed, farm inputs, and other needs. Networks such as the Hawaii Farmers Union United support alternative farmers with legislation, education, and cooperation (hfuuhi.org) based on the grassroots advocacy model provided by the National Farmers Union. Several of the farmers in this study talked about the positive impacts that close cooperation among farmers.

Farmer Kimberly speaks to the idea of co-operatives for small-scale farmers in order to get costs of production down and final retail costs down. Kimberly: "*Yeah. I think from my experience, I have thought about this often…a co-op of some sort. You know the dairies used to have co-ops…they would form a co-op that is a non-profit organization and through that co-op they had all these little tiny dairies that had 100 cows, 200 cows, 300 cows, that didn't have the purchasing power that the larger dairies had. So they could [together] buy a container feed that the large dairies would buy and get a price-break because they're buying in volume now because they're buying for more than one farm. For example, I as an*

individual have to go out and buy containers for my products. As a small-scale producer I cannot get that volume discount that the large producers can get. And then the price of my product I automatically lowered. Same things with labels and containers, plastic bags, all of those things that I as a small business have to buy in small quantities I am paying a lot more than the large businesses who are paying fractions of a penny for their containers while I am paying 12-13 cents per container they're paying 1/2 cent for containers. So a co-op…I don't know what that would look like but it'd be a an organization that use products for their values added products like jars and containers and be able to buy on a volume basis and then I'd be able to buy from that co-op. So I don't know if it would be private organization, or a bunch of small farmers coming together and forming it, but it is an idea that I have thrown around because I have seen it work with feed."

Farmer Arnold also commented on buying pesticides and fertilizer for his organic operation. Arnold: "*The next challenge is to do with finding and acquiring the right fertilizers and pesticides. Fertilizer is more expensive and harder to find so I've made alliances with other people where we order a whole containers full of organic fertilizer that comes over from the mainland and I do this twice a year and I have pellets of the stuff sitting here. So that's one thing but the other thing is all the other compounds that you need."*

Some farmers work closely with one another to advance their marketing. One the Island of Oahu, Laotian farmers talk to each other before planting as not plant the same things. Choosing the right crop can make a big difference especially for having a wider assortment at the farmers markets. For example, if one farmer decides to grow cucumber and no one else grows cucumber that season, by chance or luck, then they can make much more money in very little time. Farmer Lao: "*Laotian farmers cooperate with each other, especially neighbors. We coordinate together what to grow before the season, and then trade products after harvest. This way each farmer can bring more variety to each market.*"

While some farmers develop cooperatives at the start-up phase of their farm such as Friends with Farms (https://www.friendswithfarms.com) cooperative in Waimanalo, Oahu, others join close-knit networks at the later stages of their development to lower cost and gain political power. In the HFUU survey, 90% (*n*=110) of members agreed and strongly agree that It was important that HFUU has a seat on the Hawaii's Board of Agriculture. Other alliances such as the Hawaii Good Food Alliance (HFGA) formed to

create a collective vision for multiple community-based farming organization who, when operating individually often found that they were competing for the same government resources. Tina Tamai (personal communication, June 9, 2019) who is one of the founders of the HFGA shared the following description about the intent of the organization.

> As we followed the wisdom of community leaders to shape our approach and direction, we found each community doing things differently. However, because the community led them – they all worked! As a result, we evolved into a network of networks, a network of a diversity of community-based food systems networks and initiatives, and a collaborative based on inclusion and shared leadership – mindful of engaging every member and all sectors. We define our mission to increase food access and healthy eating in low-income communities. But, in order to accomplish this mission, we need to build strong, effective food systems to address food security and ultimately, food resiliency. Our Alliance is a highly cohesive collaborative comprised of about 25 individuals, who are all leaders, highly competent, passionate , and committed people – yet are able to work collectively together with equal voice. We represent a diversity of communities, ethnic and cultural perspectives, expertise areas, leadership skills and settings and sectors throughout Hawaii - yet, function as one unit.

Currently, several other alliances and networks are developing in Hawaii to address issues, resources and visions that no single entity can leverage on their own. The initiatives of network and alliances often focus on bringing more funding, having more control of funding, and legislative initiatives around special topics such as workforce development, food access, sustainable agriculture, and food safety. According to Andree et al. (2019) governance takes goes beyond 'government' in at least two ways: 1. it acknowledges that more than just the public sector is involved in decision-making and bringing resources to the table, and 2. collective public decision-making and problem-solving benefit from greater engagement from nongovernmental actors, as broad-based engagement in governance processes can be more effective at achieving shared, public objectives than governments acting alone (Andree et al., 2019). Several authors have suggested that the local and regional government (LRG) must consider these collective efforts as public infrastructure in community food systems and actively fund those (Raja et al., 2018). LRG support for community food system are critical for soil-to-soil food infrastructure is part of the civil commons, and not only important for food itself, but for a whole host of other benefits to communities (Raja et al., 2018). In Hawaii, groups such as HFGA and HFUU actively promote sustainable and regenerative agriculture. In the HFUU survey, 90% (n 110) of members said they make it a priority to buy and eat local, and 80% (n 110) of members said they support cover cropping along with other regenerative soil health practices. Ultimately, these networks and alliances strengthen alternative farmers advocacy as they create and maintain ally relationships of a wide range of stakeholders including food producers and processors, food establishments, government, school districts, and community-based organization grounded in shared values.

From the point of view of this research, it is crucial that such efforts include the voices of alternative and sustainable farmers who are a key component to community food security. In turn, there are alternative farmers who are ready to engage in these efforts because they have experiences grown beyond the initial stages of expansion and can engage in those effort simultaneously as they scale-up production. Holtz-Gimenez (2001) argues that perhaps the most pressing lesson is simply that agriculture in general will change when farmers and their allies are capable of changing the institutions that hold change back. Alliance building is a good example of the efforts emerging to change institutional powers that hold them back; however, alternative farmers' ability to engage in such efforts increase after they have experienced the initial growth period in their organizational lifecycle. By contrast, farmers could not be effective is they cannot persist in the market place. As a result, planners and LRG efforts for community food security have to build a more comprehensive understanding of farm business survival and support each stage of the organizational lifecycle, not merely efforts aimed at inclusive planning.

Understanding when Direct Marketing is a Solution, when it is not, and the challenges that remain for Small Farmers in Hawaii. This section discuss direct marketing considerations for farmers based on the findings of this dissertation. Direct marketing is a relatively new phenomenon that allows small-scale farmers to stay in business because of the increased income opportunity. It is also a form of alternative marketing that supports farmers in sustainable agriculture, organic agriculture, permaculture, regenerative agriculture and other related forms of social movements for agriculture in the U.S. Direct marketing allows food consumers to meet farmers' face-to-face and have a conversation about good food. While direct marketing appears to support farmers on the journey to become more economically viable, there are a few obstacles that remain.

Farmers who rely on direct marketing are learning more about the new skills needed to excel at the markets. Sales, marketing, delivery, and public relations skills were not a common part of conventional, single commodity agriculture. Farmers often suggest that they view face-to-face meetings with consumers is an opportunity to educate them, be educated by them, and to form new relationships that bring with it the hope to preserve the alternative farmer. Farmers often do not view direct marketing as sales but rather education. These findings validate Hinirchs (2000, pp 295) statement that direct

marketing options "*present an apparent counterpoint to large scale, more industrialized systems of food production and distribution, now under the growing control of a few seemingly unpeopled, yet powerful transnational corporations. If relations between producers and consumers are distant and anonymous in more* "*global food system", in local, direct markets, they are immediate, personal and enacted in shared space."* To improve direct marketing some small-scale farmers attain the skills of marketing and sales themselves while other farmers rely on their employees to excel in areas that where they fall short. Farmers who rely on direct marketing are learning more about the attendant expenses involved with those efforts in Hawaii.

One of the lessons learned by direct sale farmers has to do with understanding and accounting for the expenses of attending direct marketing venues such as farmers markets, CSAs, and on-farm sales. Farmers who failed to account for labor and other expenses of direct markets have to recalculate the final price of their food products to gain the benefits of direct marketing. At the end of the day, farmers report that earnings from direct markets compare to wholesale prices, not retail, once accounting for all expenses. Farmers that participate in farmers' markets currently do not make as much income from each market as they used to five to ten years ago. Farmers' market owners say that it is hard to find local farmers for the markets and that they need more farmers to attend. On Oahu only a small portion of the vendors at the farmers' markets are farmers, most vendors sell food, crafts, and value-added product by non-farmers. On all islands, the number of farmers markets has increased from a handful of markets a decade ago to one in every neighborhood. As a result, farmers found that they have to attend multiple markets to make the same amount that they used to make from one market. Support for more authentic farmers' markets where small-scale and diverse farmers succeed is urgent to maintain farmers' participation and market legitimacy for consumers. Farmers' markets entities can collaborate with local farmers and give them some rights to make decisions about the policies of the markets. While it might seem convenient to have a farmers' market in every community, it is more important to have farmers' markets that can be profitable for farmers.

Other lessons learned by farmers attending farmers' markets include how to design the booth, signage, wider assortment, staffing and more. Seasoned farmers spread the risk and usually attend more than one farmers' market, perform more than one type of direct marketing, and build on other income generating activities. Farmers promote educational tours on farms, overnight farm stays, and farm

restaurants at farmers' markets. Improved local markets and increased consumer interest, however, does not solve all the farmers' problems even though the high demand results in more economically viable farmers. Beginner farmers are still challenged with the high price of land in Hawaii. It is rare to find land prices below $50k per acre in any of the Hawaiian Islands. In additional, access to water and installation of a water meter can be another costly start-up expense. For farmers who already have access to land and water, availability of skilled and reliable labor is the largest limitation. If availability of labor is resolved, it presents the largest opportunity of growth for scaling-up local food production in Hawaii.

A small-scale farmer must have many skills, take on many roles, and needs more hands on the farm. To minimize cost of labor, some small-scale farmers have taken advantage of the big wave of young people who want to vacation in Hawaii while learning about agriculture through networks such as World Wide Opportunities on Organic Farms (WWOOF), Attra, Help X, Work Away, and others. Many of the volunteers become interns and apprentices who continue to work in agriculture and food systems as farm workers and some become farmers. In fact, the volunteers, interns and apprentices often leave the city and the corporate world in search for a different way of living in harmony with nature. They are fueled by ideas of alternative and sustainable lifestyles. In Hawaii, the trend of these travelers who sometimes become residents is strong. Farmers receive many more requests that they can handle. The movement presents a possible solution to the labor crisis on farms in Hawaii and the U.S. mainland. Operating a farm with people who live on the property with little to no prior farm experience comes with tangible and intangible costs: cost of food, shelter, stipends and often loss of privacy, farmers would say. Small farmers who do not participate in those networks often rely on the help of friends and family instead of visitors. Some farm managers have learned from years of recruiting, hosting, and compensating volunteers, interns and apprentices on farms. The farms that excel in this process have found a temporary solution to the labor problem of availability and affordability in the start-up years.

As some farmers grow, they rely more on wholesale to stores, restaurants and institutions for a large portion of their income. In Hawaii roughly 75% of all local food is sold wholesale (USDA, 2016). Direct marketing venues such as farmers markets can still be an important activity for those farmers to meet and talk to potential customers, but not for the direct-sale premiums but rather to educate customers about which store and restaurants carry their foods. Local wholesale accounts are considered a form of

direct marketing even though it is not directly from the farmer to the final consumer. The change to wholesale is often a result of small-scale farmer who has scaled-up operation from a small to a mid-size farm. Mid-size farms are farms with an annual revenue of $500k or above. Mid-size farmers can handle larger customers who want more local food and more steady supply. Large organic farms have been criticized as inauthentic and no longer an alternative to industrial food systems based on observation of organics in California (Guthman, 2008). Guthman (2004) suggests that the conditions set by processes of agro-industrialization undermine the ability of even the most committed producers to practice a truly alternative form of organic farming. Hawaii's small-scale and organic farms who are scaling-up production cannot yet be equaled with the scaling-up of organics in California.

Nevertheless, some farmers are not satisfied with meeting customers at the markets, they want to bring them home to the farm. Farmers continue to attend farmers markets in order to educate customers to promote educational tours on farms, overnight farm stays, and farm restaurants. Agritourism is a promising trend for Hawaii's small-scale farmers- local as well as national and international tourist are increasingly wanting to come to the farms to meet the farmer and their family. While direct marketing, such as farmers' markets, does provide a venue for customers to meet the farmer, for the farmers, it can be an intermediate step to make the necessary connections for customers to visit the farm. The author's own experience as a farmers' market vendor for two years with Naked Cow Dairy was that some customers at the markets became regular friends of the farmer and start helping out with production, marketing, tours, and other events.

Not every farmer wants to do direct marketing. While it is true that a farmer who makes a profit stays in farming, and that direct-marketing contributes to improving profits, many farmers often prefer to stay on the farm and close to home for many reasons. Some prefer spending more time with production. Other farmers want to be close to their families. In these situations, farmers enjoy selling their food to a nearby food hub. Preferences such as being close to family can be hard to measure; however, many farmers, rural and Indigenous Hawaiian communities value the family. They do not prefer to attain the full retail value of their products if it takes them away from the family. Instead, a community oriented food hub is a solution, a middle-man, for some farmers in Waianae, Oahu. They have preferred the community oriented hub because it allows them to do a quick drop-off and then they can go about many other things in their day.

Food hubs, discussed in the next Chapter, and the growers that rely on one in Waianae share the work and benefits of growing with their family. For them it is usually family oriented activities such as caring for grandchildren, but also spending more time on the farm, and attending other matters not directly related to food production but rather the household or property. The hub, in turn, is responsible for selling and delivering the food that its members have grown. The Kahumana Farm Hub in Waianae was a start-up by Kahumana Organic Farms who already had an existing customer base and could sell the community's produce to the same customers. The main challenge for a farm hub is to support itself financially including the salary for an administrator in charge, food storage space or a warehouse, a truck, and office space. To break-even, the hub needs to sell approximately 300k pounds of local food annually. In addition, the hub can advocate for the other challenges faced by its farmers including finding solutions for farm theft, and giving growers the training they need to improve their food growing skills. From the growers point of view, the hub is a solution for them insofar that it can sell all of their produce, but if growers have to go to multiple locations for sales it might not be worth it.

Discussion and Conclusion: Lifecycles of alternative farms in Hawaii. This research project involved the voices of over one hundred alternative farmers, workers and other stakeholders to better understand the lived reality of alternative farmers and how they can be supported to scale-up local food production and improve overall community food security. As mentioned early on, the design followed an inductive approach to knowledge by first exploring the realities of those involved and later finding meaningful approaches to presenting the findings. One of those approaches is the theory of organizational lifecycles. According to organizational the stages or lifecycle approach, there is a beginning, a middle and an end that can help explain how an operation grow and the typical cycles that it experiences. The author visited many of the beginner farmers in this study several times and explored how they had learned and improved their operations over time. Other authors have alluded to understanding the alternative food movement through a lifecycle approach but not driven from an insider farmer's perspective but rather an outsider perspective (Tovey, 2002). This study attempted to produce more of an insider perspective to get an idea of what it is like to operate an alternative farm driven by the stories shared by farmers and workers through interviews and surveys.

As Adizes (1979) explained in his essay on organizational passages over forty years ago, people, products, markets and even societies have cycles of birth, growth, maturity, old age, and death. In part,

what makes the lifecycle approach intriguing is the simultaneous growth and interactions between two different lifecycles: first the local food industry and, second, alternative farmer operations. For example, DTC marketing has become more economically viable as a career choice for farmers, which can be explained by the doubling of the average income of farmers in direct sales in the five years, 2012-2017, for Hawaii but also from many of the comments in this study (USDA, 2012, 2017). In turn, increased consumption of local food has led to the development of many start-up farm operations who are finding ways to scale-up, invest, and specialize their financing, marketing, and laboring efforts. While the lifecycle analysis that was provided in this chapter loosely adhered the theory of organizational lifecycles, it does help to identify timely solutions that government can adopt to support and promote the growth of local food operations.

Most of the farmers in this study fall into the start-up and emergent growth phases of development. On average, farmers were in their seventh year of operating. Some farmers develop faster than others. Years in operation, however, does not always determine where they fall on the lifecycle scale, the types of activities they engage in tend to be a better indicator of developmental phase for farm operations.

- *Start-up: The idea phase*- before alternative farmers starts the operation and has bills to pay, they come up with a business idea. Alternative farmers' business ideas highly correlate with their way of life. Emphasis is put on providing alternative to the conventional agricultural and food systems model. At this stage, the challenge for farmers is to gain the necessary information to start a new business operation. Farmers in this study felt it was important to gain the necessary knowledge and skills of operating a small-scale business with special focus on financing and marketing. One of the activities that allow for that is to conduct visits with other *seasoned* farmers with a similar business. For example, if a farmer dreams of opening a small-scale dairy and creamery, it is recommended to visit people who are currently successful in that business both in Hawaii and the U.S. mainland. At this stage, the support mechanisms that help farmers to get to the next stage include funding resources and technical assistance to visit other similar businesses, to be able to generate the necessary business plans and feasibility studies. Even when those resources are available, it is important for government policy to connect the dots for farmers, to walk them through what resources are available and facilitate one-on-one coaching either by themselves or by deliberately funding initiatives that can support those farmer needs.

- *Start-up: Infant organization*- before alternative farmers can scale-up the scope of their products or services, they will start to have bills to pay. Expenses at this phase include purchasing or leasing land, land clearing, fencing and building irrigation infrastructure, and purchasing vehicles, machinery, and other equipment. This phase requires one of the largest investments in the farm and access to capital is the necessary solution to not be stuck as an infant organization. The other big expansion phase is the emergent growth stage. Farmers suggested that it is difficult to access grants at this stage, they seem to be more designated for the growth stage. Instead, farmers use a variety of strategies to gain the necessary finances including personal savings, funds from family and friends, government loans such as the State loan program for new farmers or the Federal program for farm ownership, and some do crowd funding. The average cost for start-ups was $220k but did not include the cost of purchasing land. Similar to the idea stage, while resources might be available farmers do not always benefit from them so there is a need for more outreach, information, and one-on-one business counselling. In some places, farmers who live in close proximity to one another have benefitted from government resources that provide for shared machinery, tools and equipment.

  Another key consideration at this stage is that the farmers tend many activities by themselves and leadership is very centralized. Many farmers bring in volunteers and interns to help them, but they cannot quite afford to pay them at the stage. Instead, they offer them a range of non-economic benefits such as training and education on farming and community living and work-trade arrangements of housing and providing free food for the workers. Selecting the right volunteers and interns is key and some farmers are better at it than others. The work-trade arrangement comes with a whole set of considerations, challenges and opportunities that have been detailed above and further in Appendices 3. In short, housing and training volunteers is a risky activity that can determine the success of the farm at this stage.

  Research has suggested that the work trade relationship is subject to exploitation and perpetuation of unsustainable work arrangement, but this study found that to be very rare both from workers and farmers perspective. As the farm starts to rely on a whole community of workers, funding resources are needed to construct community infrastructure including

appropriate worker houses or cabins and solar panels to generate electricity. Farmers who do not have access to capital to expand the community capacity on the farm can easily be stuck in the phase and, in turn, never develop a reliable workforce. The infant organization phase is also an important time for marketing considerations. Most alternative farmer engage in multiple DTC marketing activities and, at this stage, they are testing them all including attending multiple farmers markets, offering tours, CSAs, growing different crops for markets and so on. Some farmers are good with matching the skills of their helpers with their choice of marketing, but generally, they engage in too many marketing activities and find the need to specialize. On average, the infant organization stage duration was for 2 to 3 years based on the alternative farmers involved in this study.

- *Emerging growth and growth phase*- At this phase, the alternative farmers move quickly toward their goals to reach a viable scale and expands their impact on the nearby communities who purchase local food. After a couple of years of being in operation and before the alternative farmers arrive at their expansion phase, they start to specialize their marketing strategy in one way or another. During this time, farmers narrow their marketing, financing, and laboring activities in ways that streamlines their income. Farmers in this study focused more on wholesale accounts with stores and restaurants given the decline of opportunity in the farmers markets. Some specialized in agricultural tourism, bed and breakfast, and CSA operations as a strategy to *bring the farmers market home* and spend more time on the farm. For many farmers in Hawaii, agritourism and farm tours are an important educational aspect that intersects with many other forms of direct sales such as on-farm sale of farm products, farm-to-table operations and bed and breakfast. At this stage policy supports the need to address funding and technical assistance for farmers to access certified kitchens for value-added production, food safety protocols such as traceability, and some stores will require a third party food safety inspection which is a costly endeavor. In addition, the decline of farmers who participate in farmers' markets is a problem for preserving authenticity and legitimacy of the farmers' markets across Hawaii. To improve farmers' participation at farmers' markets, policy solutions should attempt to lower farmers' cost of attending markets including expenses of gas, permit fees, booth fees and time away from the farm.

The growth stage is the second period with significant new investment and expansion of the farm. A common theme for all the farmers in this study was their plan and pursuit to expand their operation to scale-up production was due to high demand for local food. Several farmers bought more land. On average, the expansion costed farmers $50-75k per acre not including the cost of land. Some of these expansion were funded by grants while most of them were funded by loans or private equity. Most of the farmers in this study started to break even after five to seven years, which is normally during the growth stage. This phase of expansion provides several insights to understanding how to incentivize small-scale farmers and local food production in response to local, state, and federal programs. The necessary government support and policy considerations at this stage will be discussed in more detail in Chapter 7 in the discussion of priorities of workforce development, scaling-up local food production, and on-farm housing.

A major aspect of the growth stage is for alternative farmers to find a reliable workforce, it was important for the farmer to offer its employees an attractive employment package. Some of their volunteers from the start-up stage want to continue as paid employees. Interns and apprentices get compensated through stipends to make a longer commitment including meals and lodgings. Farmers that have enhanced their community capacity (meals, lodging) will benefit greatly from that at this stage. Many of these people start as curious customers, then become volunteers, interns, and apprentices. Some move on to be new farmers and farm employees. Many farmers start to rely on regularly paid employees for the most important functions of production, processing, marketing, and sales. Government support at this stage includes working closely with farmers who are training employees to provide funding and technical to formalize intern and apprenticeship programs. That could include cost-sharing stipends and health insurance for trainees. Funding programs should also proactively help farmers to increase the capacity and quality of community spaces on the farm including farm housing. This will be discussed in more detail in Chapter 7 under the policy priority of agricultural workforce development.

Finally, and perhaps not as a result of simultaneous growth of the alternative food industry and alternative farms in Hawaii, farmers are forming closer networks, alliances and cooperatives to

form strategic partnerships to lower costs, access funding and other resources, and to affect the legislature. Farmers' ability to participate and control those efforts is directly linked to them reaching a point of growth and decentralization in their organizational development which allows them to address long-term and structural issues. To strengthen farmer participation of those groups, policy solutions should create funding for organizations and associations such as local food alliances, networks, and producer cooperatives. A key consideration is that farmers who are not economically viable will not be able to participate in networks at this level. As a result, the policy supports identified at earlier stages in the alternative farmer organizational lifecycle will help farmers to break-even and have capacity to engage in efforts that, in turn, could affect the political and resource structures that they exist within.

Table 5.2 presents a summary of the organizational lifecycles of an alternative farmer. As the organizational lifecycle model reveals useful insights to how alternative farmers can scale-up local food production, future research could more deliberately utilize the lifecycle format, deductive approach, to gain a more detailed understanding of the various stages of farm development and the role of policy and planners in it. While official government reports and academic literature has identified the need to learn more about how to incentivize increased local food production (Low et al., 2015; Martinez et al., 2010), this study takes their call one step further by identifying what and how policy supports can effectively promote farm business survival at various stages of development. The majority of alternative farmers do not have a parent company to support their existence and growth in the local food industry. As a result, government resources should take the role of a parent company and support small-scale and alternative farmers to become successful by providing timely support and appropriate access to funding for capacity building and farm expansion.

Organizational lifecycle of alternative farmers in Hawaii

Passage	Stage	Activities	Challenge	Policy Solutions
Idea/ courtship phase	Start-up	1. Dreaming of alternatives to agriculture, food systems, and livelihoods 2. Writing a business plan or feasibility study	1. Not enough information to make good decisions	1. Feasibility study 2. Visit similar operations 3. Business plan
Infant organization	Start-up	1. Accessing and clearing land 2. Critical infrastructure 3. Help from friends, family and volunteers 4. Selecting marketing and labor strategies	1. Purchase land, equipment, critical infrastructure 2. Spreading oneself too thin, centralized leadership	1. Loans, grants 2. Shared equipment, tools, and machinery

			3. Capital for investing 4. Reliable helpers	
Go-go **Adolescence**	Emerging growth Growth	1. Scaling-up production 2. Expanding land-base 3. Building a reliable workforce 4. Development of value-added products 5. Strategic partnerships, networking and cooperatives	1. Breaking even 2. Compensating workers 3. Development of products with a local "edge" 5. Competing for resources	1. Loans, grants 2. Cost-share work training programs and vocational training programs 3. Access to certified kitchen 4. Technical assistance with food safety 5. Capacity building for farm organizations
Mature	Mature	-	-	-

Table 5.2 Organizational lifecycle of alternative farmers in Hawaii is a summary of the discussion on activities, challenges and policy solutions for various lifecycle stages of the alternative farm organization.

Chapter 6
Community Oriented Food Hubs

Function is the cornerstone of Indigenous epistemology

Source: Manulani Meyer, University of Hawaii at West Oahu 12/11/2018

Overview

This chapter presents the findings and some implications of the findings with respect to the portion of this dissertation that focus on community food hubs. While the literature review introduced the concept of food hubs in Chapter 2, the first section of this chapter reiterates some of the key concepts. The rest of the chapter integrates answers from food hub related interviews, survey, focus groups and participant observations and analyses of the impact of a food hub in scaling-up food production and the role of hubs in Indigenous communities to promote subsistence practices simultaneously as it offers people an income making opportunity that is culturally appropriate. Food Hub's policy perspectives are presented based on a policy oriented focus group in this chapter in the section on policy suggestions. Policy recommendations are then further discussed in the next chapter that highlights three priority areas of which one is improved support for community oriented food hubs.

The Role of Food Hubs in Scaling-Up Local Food Production

Food hubs can help facilitate the sale of local food on behalf of small-scale farmers. A regional food hub is a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional farmers to strengthen their ability to satisfy wholesale, retail, and institutional demands (Barham et al. 2010). Food hubs are typically a part of a marketing strategy to improve access to local food for community food systems (Farnswort and Morales 2011). Small farmers and growers who produce local foods face challenges in scaling-up, due to the significant costs of marketing their products and processing those products to prepare them for markets (Day-Farnsworth and Morales 2011). Moreover, the incentive for farmers to expand and increase on-farm efficiency is reduced as more time is spent on off-farm business activities, such as marketing and networking (Martinez et. al., 2010). Food hubs have been described as an essential component of scaling up local food systems and a flagship model of socially conscious business

(Colasanti et. al., 2018). Food hubs have also been described as "*financially viable businesses that demonstrate a significant commitment to place through aggregation and marketing of regional food*" (Fischer, Pirog, & Hamm, 2015a, p. 97). One of the main benefits of a food hub for small-scale farmers is that it provides a local focal point close to home where they can sell their produce and products. In a community food system, a food hub often results in outcomes such as increased availability of local food, increased availability of quality foods such as organically produced food, more affordable local food, and the increased economic viability of small-scale food producers (Day-Farnsworth and Morales, 2016). They have become key entities in local food systems' infrastructure allowing small-scale and midsized farmers to adapt to increases in demand by outsourcing marketing to them (Low et al. 2015).

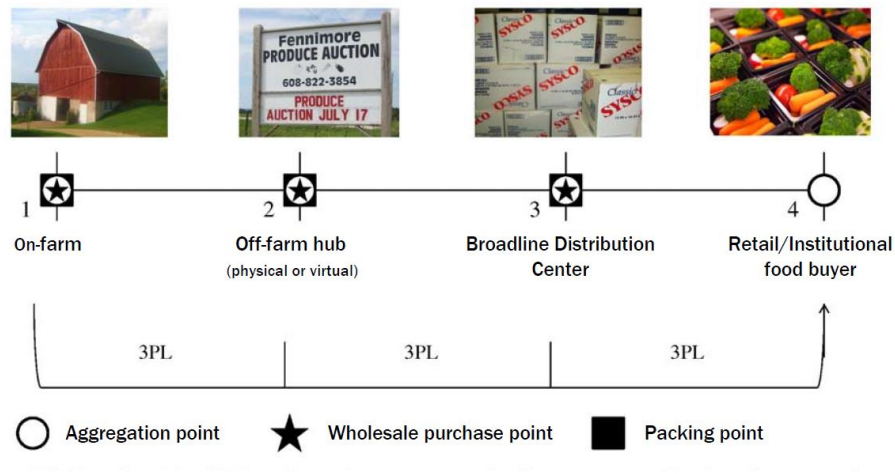


Figure 6.1- Aggregation Points and Distribution Paths Across Local/ Regional Food Supply Chain from Day-Farnsworth and Morales (2011)

Currently, there are approximately ten to fifteen different food hubs in Hawaii. A handful of them are on the Island of Oahu, another handful on Hawaii Island, and one to two hubs on each of the other major islands including Maui, Kauai, and Molokai. "Alternative Structures International" dba Kahumana Organic Farms is a 501(c) 3 non-profit organization operating on 50 acres in Lualualei Valley in Waianae, Oahu. Kahumana Organic Farms provides multiple social and community programs, such as an Organic Farm and Café, partially staffed by members of its disability and homelessness programs. A Commercial Kitchen, serving over 1,500 meals a day to over 35 schools and youth-based organizations and its Learning Center, providing outcome-based services for people with developmental disabilities. In January 2017, Kahumana Farms received $40,000 for a project called "*The Kahumana Farm Hub (KFH), creating a cohesive farming community for West Oahu specialty crop farmers*." The purpose of the hub was to create a nearby resource for the community of small-scale farmers and backyard growers who

grow food in Waianae. The hub facilitated marketing, sale and delivery for growers. The hub eliminates the need for growers to make the commute to urban Honolulu and allows them to spend more time at home and on their farms. Kahumana through its extensive network of buyers facilitated the sale and paid growers 70 cents of each dollar it received in revenue usually upfront. KFH is different from some other food hubs discussed in Day-Farnsworth and Morales (2011) because 1) it is an on-farm food hub started and owned by an organic farm operation, and 2) it offers services to people who often do not consider themselves to be farmers such as residents who grow food in their backyards and Indigenous Hawaiian people who grow food for direct consumption and to share with family and friends.

People noticed that KFH exists in a community that is currently labeled a food dessert with a high concentration of food insecurity. Low-income regions tend to be void of stores that sell affordable and healthy, fresh food (Minaker et. al., 2011). This is true for the Waianae Coast where more people suffer from food insecurity-defined as having little to no access to fresh, healthy, affordable, or culturally relevant food compared to the rest of Hawaii (Kent, 2016). For the Waianae Coast as much as 50% of the population participates in federally funded Supplemental Nutritional Assistance Program or SNAP (UH Manoa, 2003). But Waianae is also considered a food basket on Oahu with an abundance of farmers and agricultural activity historically.

Community Oriented Food Hubs Scale-Up Local Food Production

A community oriented food hub is a solution for government planners who want to improve access to local food without necessarily engaging in the long process of raising new farmers. That is because hubs aggregate from existing food producers who are otherwise ignored by the formal food system. Since its start, the Kahumana Farm Hub (KFH) facilitated more sales than originally expected from the grant proposal. The first year KFH paid $96,325 to its members for their produce, brought about 74,300 pounds of food to the market place, and added $128,499 to the non-profit's revenue. The majority of food sold included fruits such as mangoes, avocados, oranges, tangerines, lemons, pumelo, breadfruit, and other fruits that grow in Waianae. In 2018, KFH gained more members and reached its 2017 supply of 90,000lbs by August. Mangoes outweighed all other crops by far with a total of 40,000lbs for the year mainly in May, June and July. KFH supplied more mangoes than one interisland supermarket chain could purchase and had to use all its markets to move the neighborhood grown mangoes. KFH currently has approximately 100 participating grower families (Ohana's). In the first year, over 90% of members were

socially disadvantaged and beginning farmers based on USDA description. In addition, many of the socially disadvantaged farmers received SNAP benefits; as a result, some of the payments went to growers who also suffered from food insecurity. By the second year, KFH had facilitated the sale of over 200,000 pounds of mostly fruits to farmers' markets, community supported agriculture, grocery stores, cafe's and restaurants.

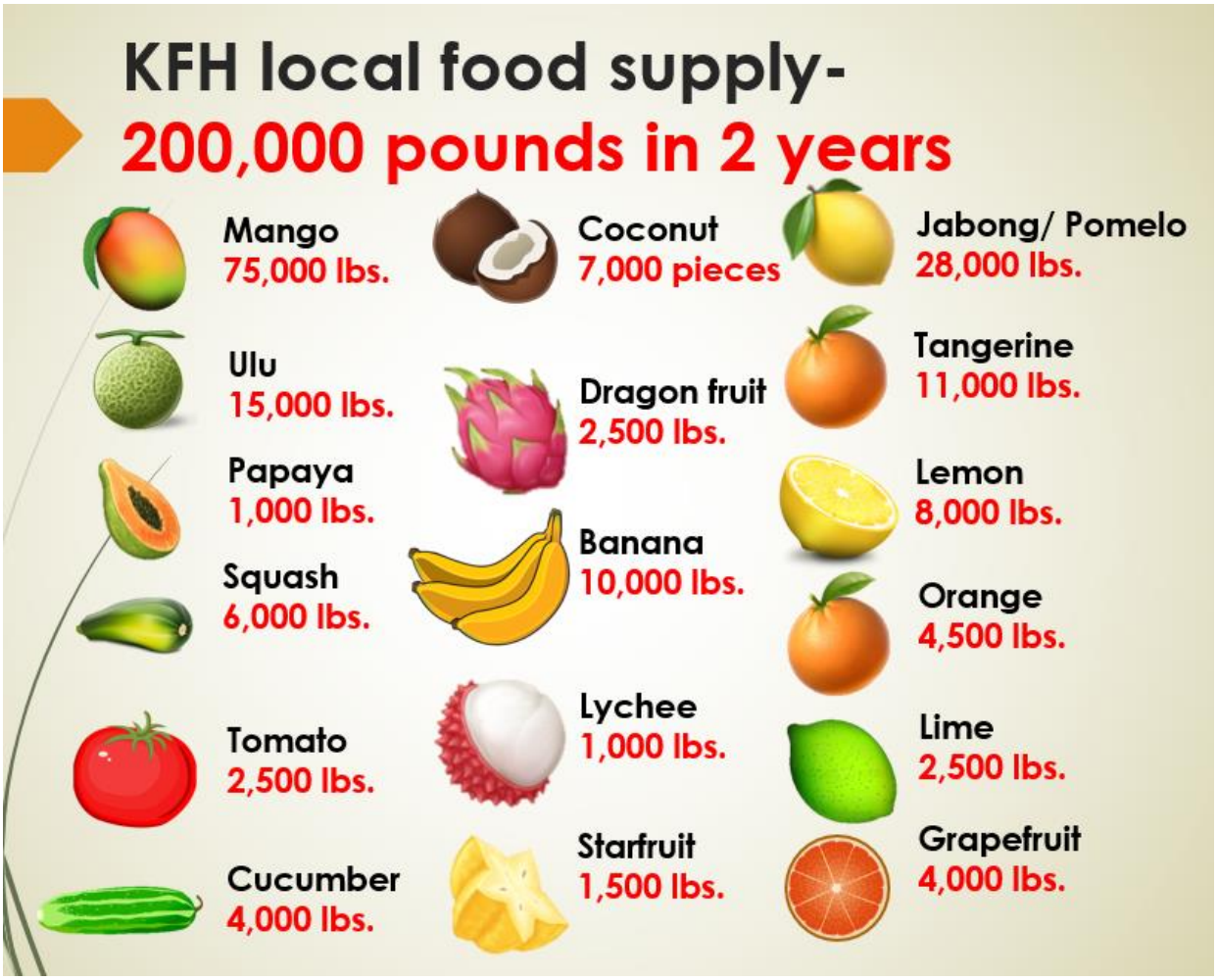


Figure 6.2- KFH local food supply

Community Oriented Food Hubs Stabilize the Supply of Local Foods

A community oriented food hub is a solution for many food establishments who purchase larger amounts of local food such as restaurants hotels, cafes and grocery stores because they want to support as many local farmers as possible but cannot practically have a relationship with each of them. Consistency and diversity of local food is also a solution for farmers' markets operators who are

generally challenged with a consistent supply of farmers and local foods at their markets (Farnsworth and Morales, 2011). A food hub is a middle man and most growers feel fine with the arrangement because it is a quick stop for them to drop-of their produce and then go about the many other things that they want to do that day. But some growers would like to do more direct to customer (DTC) marketing to gain the full market price of the food they grow. The mission of KFH is to connect local growers to local markets. In some cases where growers expressed an interest to connect directly to the customer the KFH manager would facilitate than and eliminate the need for the hub in the middle. On January 18th 2018 the KFH manager wrote a field-note: *"While I have been part of setting up market connections for rural growers, the end goal is always to work myself out of a job, to effectively teach my skills to the community so that they can perform the work they want themselves. In the Kahumana Farm Hub people come to me with something they have grown and harvested and I inspect it and send it on to the customer. When the grower has learned what quality the customer expects and the communication required for the exchange, I will often try to have the grower break-away on its own so it doesn't have to rely on me as a middle man and thus make the whole food dollar, in line with the local food logic for farmers of direct sale to final consumer."* During the first two years, KFH assisted three growers to do more direct connections; one ended up coming back to KFH because they did not want to deal with the communication. It is partly by understanding the preferences of wholesale customers that KFH can complete its mission on behalf of the growers. In a field note the KFH manager was visited by grocery store customers in October 24, 2017:

"Peter from Down To Earth brought his entire team of buyers from the island to Kahumana...In the group there were three buyers who had worked for 40 years in the industry not only with Down To Earth but also with the local grocery stores Foodland and Times Supermarket…from the store's perspective they are not [only] interested about how we make social changes in our society but rather they want to know about food quality and traceability…they were very happy with Kahumana and they especially like the way that we communicate with them. They shared some of their experience from the floor. They said that when they are working they don't have time even to check their emails or to sit down for that matter. They said the best way local farms can work with them is by calling them and checking in with them every week and that is what we have been doing at Kahumana. They couldn't talk enough to the point of people falling off the chart as they call it. They would get these new farmers who just who would start to deliver to them and then just nothing not contact them basically fall off the map. The consistency they said at which a farmer can deliver to the store is important and while they understand the effects of

seasonal changes and their customers do too they still said that some people do have no sense of consistency. And it's not just for them about consistency but communication of what is to come and what is not to come. They appreciate a farmer much more who can call and say "sorry this will not be coming in this week" instead of not calling at all because it gives them a chance to order the fruit or vegetable from another source."

This comment helps explain how farmers can maintain standing orders with the biggest buyer of local foods- the grocery stores. A standing order helps the hub because it is a standing opportunity for growers to make an income every week. As the administrator of those orders, the KFH manager has to constantly communicate with the growers on a day to day basis to fill the orders. That is perhaps a good explanation of the role as the KFH manager because the growers themselves do not want to handle standing orders while customers usually prefer that type of continuity. On January 12, 2018, the KFH manager reflected on standing orders in a field note: *"Another crop that was growing in abundance and not being ordered was Jabong or Pomelo. I remember back in August after mango season my supervisor Christian asked me what we will focus on now that the mango season is over. I said let's try to move 500lbs of pomelo every week. We got a standing order with Foodland for 300lbs per week, and they have been ordering that weekly since September. It has benefitted many community members who otherwise see their pomelo waste."* For customers the price point of the standing order is important. Once the manager can find out what customers are willing to pay he checks-in with the growers to see if there is an agreement. At times, the manager has to do some extra negotiations on behalf of the growers to receive a larger share. The KFH experience reflects issues faced by individual growers and the food hubs solution for them similar to Day-Farnsworth and Morales (2011) who argued DTC marketing by farmers is not able to satiate demand for larger customers in the local food system. Day-Farnsworth and Morales (2011, p231-232) said that "*direct marketing is an impractical means of moving high volumes of local product into venues such as retail grocery stores and cafeterias because farm-direct sales typically move small quantities of product, while retail and institutional buyers would prefer to buy larger volumes from fewer suppliers."* In the first year, KFH added more than seven new large local buyers including some with multiple store locations such as Whole Foods, Down to Earth, Foodland, and Island Vintage Coffee. As a result, the new connections among growers and consumers facilitated by KFH serves as an alternative and counterpoint to concentration of power and ownership by multinational agri-food

corporations and supermarket chains that have come to dominate food supply chains (Hendrickson et. al., 2001).

Community Oriented Food Hubs Integrate the Indigenous Economy

From the beginning of KFH, the results were above expectations because more growers participated than were initially expected bringing more pounds of food and sales. Much of that success can be attributed to the fact the project is located in a community that has a long history of mutual sharing and living with aloha (love, compassion, caring). The following discussion shows evidence from interviews and participant observations in regards to Waianae as a sense of place, what people grow, why they grow food, and the cultural connections to growing and sharing food. Several comments about the food hub mention it is a solution to preventing backyard waste, empowering growers making an extra income while working full-time in other places and being a recourse for growers who are too small for the *formal* food distribution system. Several growers describe the different feeling of living in Waianae compared to other places on Oahu that have been overtaken by tourism. Kawika Alikai, a farmer in Lualualei Valley reflects on growing up in Waianae in the 1980s: "*I'm not from Waianae originally, but from Kailua umm our family comes from Maui. But you know one ting I love about Waianae is that it's what Kailua was when I was growing up. You can go down da store and you see an Aunty or Uncle and everybody more open to helping, talk story and dat kinda stuff…"*

The KFH project is located in a community with a culture and history of reciprocal sharing. Many people grow food for subsistence, which is a sign of the Indigenous Hawaiian culture. In fact, without the historical and cultural strength of Waianae and its residents as food producers this project would not be so successful. Farmers in Waianae grow a variety of fruit, vegetables, meat, poultry and keep bees for honey. What follows are a few descriptions of what people are growing on their farms or simply in their backyard. Several farmers commented about growing food to be self-reliant and to share with others in the community, which is also a sign of Hawaii cultural influence.

Farmer Emma describes here backyard: *"…about 15 mango trees, avocados, and all kine. All kine. Grapefruit trees, orange, macadamia nut…And I have tangerines. And I have grapefruit that you buy a lot. And I have this uh peach pear. But I don't know what it's called, and I have a lot of that purple fruit [starapple]... And I got that um orange egg yolk [fruit] and it's growing in the back…Chico*

[sapodilla]...sour sap… jabong [pomelo]…4 or 5 different variety of mango…Bees. I have bees and the guy who used to live there never harvest the honey."

Farmer Aunty Lani explains how she used to give away the extra food she grew: *"When we started this, when we bought the property back in 84, and we started farming we never really sold what we grew. It went to the neighbors and families… we use to go up the road and just give the neighbors around here...and umm there was one single guy that lived across from us, he did a little bit of farming but mainly for his own. So whatever we grew, we just gave the neighbors."*

Aside from growing food and sharing it with friends and family, many of the growers in the region participate in other Indigenous Hawaiian cultural activities. In addition, people describe Waianae as a place of healing which is also consistent with Indigenous Hawaii culture. Farmers Kawika comments on making Imu: *"-Well I do Imu probly about mm in the hype of everyting, maybe about two, three times a month. Everybody try hit me up cuz I have the resources here. But ah, usually you know this time a year I coach the high school football so that takes a lot of time away from my farm. So no not right now I not but culturally I, I, Imu is probly the closest thing. I have ahu Im working on up there, but Im figuring out the right time and place to, to close it. Umm other than that not really, I mean, no, except for Imu that's probly all I really do around here."*

In a field-note, the KFH manager wrote about how some other people dealt with stealing from their farms but it is also a good description of Waianae as a place of healing. The KFH manager wrote in Oct 20, 2017: *"Waianae is a place of refuge for people in Hawaii who are taking a break from society. That's an idea I have received from many residents out here especially farm hubber Walter and Uncle Bo. From their stories I understand that many people in Waianae have been burned by the system and with that I mean discriminated for being native Hawaiian. So folks out in Waianae have a much deeper understanding of stealing than others. When I spoke to Uncle Walter after he had people stealing from his lot, he said: "no let's not do anything about it, they probably really need the money and in a few days they will come back and apologize and do some yard work for me." It's like he has a different view of crime and stealing that is also influenced by his own understanding of Waianae as a healing place for folks that need refuge."*

The Hawaiian culture inspires other people who live in Waianae who are not Hawaiian. Many growers are either Hawaiian by blood while some feel Hawaiian at heart. Here are two comments from growers that reflect the former and the latter:

Researcher: *"Are you guys Hawaiian?"*
Emma Lai: *"No. Born and raced, so [the Hawaii culture] culture was always in us…No none at all, I have Hawaiian at Heart. I'm Chinese- Filipino…well I have ten siblings, along with me it's ten. They're all over the place: my brother used to live on Hakimo and raise ducks. And my other brother, he passed away but he used to make guitars and other instruments… my [other] brother used to work in the pineapple fields at that time.*

Auntie Lani: *"-that's sometimes the sad things, cuz I have Hawaiian but I only have quarter so I was never able to get… It would have been nice to have Homestead agriculture property."*

While farmers and backyard growers make up the hub's core members, KFH also encourages elders and people who work full-time away from home to gift the food grown in their backyards in ways that Indigenous Peoples always did (Ekins, 2004). Some people also arrange to trade their backyard food in exchange for yard cleaning services and other arrangements. Farmer Roger talks about his arrangement at a nearby mango farm:

Roger: "*Some like my friend Chris on the mango farm did it himself all these years till one day I walk up to the farm and said wow this nice place but then that bush gotta come down and that vine gotta come down. All that things blocking the view… But then I told him I like to come back… and he said oh yeah come, come anytime. And then one day went to his place and said look Chris you know who I am already bruh, I going help you out and he looked at me wah huh. Look Chris im not asking you for money im not asking for you to pay me asking you for pay me like how you did for everybody. I going help you out okay, I got plenty of free time on my hands I cannot walk out again knowing the fact that umm this place going still look the same you know. Hows about you give me the chance to cut down this whole place and he said shootz go for it. Eh they thought I was joking…yeah they was like wow and I mean Im proud of what I did but I don't go around telling people I did that I did that, no no, then it would be for nothing,*

why I do it and brag about it you know I do it because I like it, I do it because that's the way I've been taught you know that's the way my grandparents raised me you know oh yeah…"

When the food hub started, several growers commented about it being a good solution for reducing food in people's backyard. Comments from growers show that people do not like food to go to waste. Ultimately, the food hub helps prevent waste because it allows growers a nearby location to sell their foods.

Researcher: "*Do you guys do anything special with your citrus*?"
Margie: *"Um no not really, I just found out about this farm about selling because it was going to waste… I lived here over 30 something odd years and I never know had the farm down here Kahumana."*

Roger: *"Beautiful place and that's when I first went into that farm and yeah and you know me I cannot see something nice, something good and helpful and you know go to a waste you know."*

Auntie Lani *"…and then I found out that I was the first, so he said, of those kind of farmers, the backyard farmers. Which is good cuz it made it easier for me… umm we're partial to growing squash and bananas because for us the maintenance is easier...last year we had so much squash I didn't know what to do with it... Right now we have it on a schedule system for water. So its an automatic thing that goes on every night so that makes it easier. We didn't want to get too into it because then we don't have a life."*

Aunty Lani's comments about wanting to grow the kinds of food that allow them to "*have a life*" allude to the other activities that take time in people's life. Other farmers have made similar comments about the importance of other activities and sometimes other jobs they might do. Those descriptions corroborate Bittenbender's (1993) concept of farmers having major sources of income like jobs or pensions off the farm to preserve it. For example, Emma says she farms part-time because she has a full-time job:

Emma: "*Imma housekeeper. I clean house, that's what I do. Yeah. I used to be a caregiver. I was a certified caregiver. But then, you have to go every year to um...get your-get your test and get certified again. I think that was kinda too much for me. You know, housekeeping...you don't need to do that.*"

Mark works on the Kahumana Organic Farms' crew but also participates in KFH on his time off. He reflects on his experience with the hub and how it helps people who suffer from food insecurity: *"…the farm hub gives people that opportunity to sell it, so that's great...this fruit that was gonna go to waste …for them they get direct impact in their life right then. They get cash …like this one lady, a couple of the guys down there...were in here with kids one day and it's like "now we can go get rice for dinner". Right? And I was like (breath). Instant impact on their life. For that day. Just things like that...or we're gonna go you know out to get some food or um just supplementing whatever their income is even if they don't have any other income...yeah it just gets people more aware of the food insecurity on this island...just because there is so much...so many fruit trees, especially in just this valley. Let alone all the other valleys on this part of the West side...you know where a lot of the fruit just hits the ground, it stays there."*

Nevertheless, KFH growers are not only engaging in multiple income activities, they also have other important family related duties that are cultural by nature. In fact, in the Hawaiian culture, the idea of spending all of ones time on one activity such as farming is not popular. Instead, being a grower is part of what it means to be a Hawaiian person along with many other things that need to be done. Farmer Margie explains: "*Yeah, but I gotta be home by a certain time. Water the plants, feed the animals you know. And Im like that's a challenge already. I already gotta cut myself from what I'm doing. Then I got my grandkids which I gotta try help you know… all four days I got three of them, then the rest of the days I got one of them, cause the other ones go back to the dad yeah. Yeah it is a really challenging day all day everyday. So I tell myself, when I'm I gonna have my own time out. So this is like my time out you know when I pick the fruits and I just go come here [to Kahumana]. Cause it's like a peace of mind."*

Many farmers do not look at themselves as farmers. If we as a society ignore them, we also fail to understand who our food providers are and we accidentally exclude them. We strip Hawaii's people of the human integrity to contribute to society because food production was something that people in Hawaii always had to do to survive and sustain their civilization. This is especially true for Indigenous Hawaiian Peoples who grow food for subsistence and to share with others. Growing food was not a specialization done by some people called farmers in Hawaii but rather food security was an activity that all people contributed to.

As a result, KFH is a solution that promote both food security and Indigenous Hawaiian cultural activities because it facilitates marketing on behalf of many cultural practitioners who grow more food than they

consume. The hub was designed be strengthened by the historical and cultural advantage of people in Waianae who are food producers, and it established low barriers to entry so that anyone who wanted could participate. Growers that participated in KFH were able to utilize the hub while maintaining their livelihoods and their multiple other jobs and activities. Kawika shares how he thinks KFH is part of the solution for small-scale farmers in Waianae who do not produce enough every day to work with the large distribution companies: "*…I do know it's a resource that could help me, would help me and is helping me cuz I could go pick my Ulu filled tree and make eighty dollars, that's something that was unheard of for a very long time in Waianae because we did not have a Hub. You had to have Armstrong come in here and the only way Armstrong would come in here is, you would produce a certain amount every day…-other than that, small little truck farms would have to drive down to china town or other small markets and sell their stuff and now I can go right up the road and save myself twenty dollars in gas.*"

In a survey conducted with KFH members in the September and October 2017. Twenty seven members responded to the survey questions. Eighteen people estimated their income from KFH; the average weekly income totaled $410.00 ($4,920 annual) with the lowest $38.00 and the highest $1,500.00. When asked what makes them the most money, most survey respondents said mangoes, but other common answers included grapefruit, breadfruit, jabong, banana, lemons and tangerines.

Community Oriented Food Hubs: Challenges Facing KFH Growers

This section comments from farmers in regards to the everyday challenges that they face while growing food.

Maile: *"…we have one [mango tree] in our backyard and no one eats from it, its just there. We should do something with this tree… I think it's a Haden, I think it's a common, not even Haden. that would be nice…it's like the border line between my yard and my neighbor's yard, so it's more so theirs but no of us eat it. It goes to waste, we should figure out something with that one. People that make pickle mango, they like it…now you got Saleh so you can sell it."*

Image 13- Kahumana Organic Farms food hub manager, at right, accepts Noble Pilialoha and Darlene Hodges' 250 pounds of jabong (pomelo). Photo: Bruce Asato Honolulu Staradvertiser

Image 14- Raychel Watkins of Happyponics brings chicken and duck eggs from her nearby farm. Photo: Bruce Asato Honolulu Staradvertiser

Mark who works at Kahumana and helps KFH members on the side comments on what he considers is a big challenge with growing food in Hawaii. Mark: *"Um...I think being able to sell it. Cuz I mean its Hawaii...put a seed in the ground and water and its gonna grow. Pretty much. Anything's gonna grow. And....but there's...if you don't have the connections to sell it then what are you gonna do with all this food you just grew?"*

Tom who works at Kahumana and helps other farmers on the side shares a comment about fruit that is wasting and his efforts to sell fruit. Tom: *"I kind don't like whenever I see fruit on a tree on the hangs that people like. They have it or used it the first five years ago. But just every season they look at it, fruit falls to the ground and rots and deteriorates…It just waste away and it's a waste of a fruit. Whereas it just, it's sad. It's hard to look at things that look like, "Oh I can be eating that you know". It'll be really awesome to share, that awesome fruit and that's where I try and help people to sell those fruits."*

Farmers face other challenges beyond marketing and sales of their products. One of the big challenges has to do with water access and Board of Water Supply. Farmers Aunty Lani and Kawika share their perspectives. Aunty Lani: *"My father-in-law had a huge farm by Toledo dairy, Waianae valley and he had the floom that use to come in his property so he use to water at night, because the other farmers were not, he had enough water to do that, but then he stopped and he had to use Board of Water…we use to have access flooms and stuff before the waters use to come out from deep up in the mountains but Board of Water started like boarding it up and have for just their own use to have and disburse. Strange thing is and I don't know if you know this but even though we live in Waianae, our water don't come from Waianae. …The state wants to save on water and they want this and that and the other but yet it costs the homeowners or the property people too much money to put the other devices that they have out there and then they want to restrict you, so then your back to square one… they also came out with something that was umm another type of keeping track of the water that your not using say whats going into the system. when I called board of water years ago they told me that system was too expensive to put in. that I would never be able to gain what I put in for that meter, whatever that meter is but I don't know if that has gotten any better. We were considering and we should have done this in the beginning, like we do the washing machine, the run off goes into the yard, you know do the shower and the kitchen. The only waters going into the cesspool would be just the toilet, so it would be a waste to have all of that going."*

Kawika: *"Working with the state is a pain in the ass. Everything they say yeah to and then next thing you know they say no to or you gotta have this or you gotta have that. And that's another thing too, our state is trynna push towards Ag but I cant even get Ag rates right now cuz I don't have enough things growing yet in their eyes. So that's a three [to] four hundred dollar water bill that could be down to a hundred fifty if I had Ag rates. You know that's something you gotta challenge you know, the state you know... they don't even have a grace period to help you get started…stop selling themselves to big corporate companies. If you're a big corporate company and your selling produce or your selling food and its coming from the mainland or China or wherever the hell and they don't want farmers here in Hawaii to compete with them. I mean I understand there's some foods we can't grow here and that's fine but there's thing we can here and have the environment to grow. But the challenges is we have as farmers, let alone its hard working ten to twelve hours a day for fifty cents a day, you know. On top of that you got permits, water rights, you can't farm, you can't just farm. You know, I mean just farming alone is challenging. I spent three thousand dollars on the back-flow meter and irrigation throughout the property, still can't get Ag rates. I think the state is challenging, they say they want to help be more agriculture friendly… the challenges we have wit water in Waianae we kinda got to pick and choose what you grow and how you grow it. Umm that's why I went with a more natural farming method. Umm so that I can utilize every drop of water a get here…"*

None of the people that participated in this study was in the process of purchasing their first piece of farmland so there are no comments about how expensive it would be to start a farm today. Some farmers, however, shared about challenges with expensive food and start-up money for the farm. Aunty Lani: *"So then as we get older we realize that the vegetables and the fruits that we grow will eventually will help our family because food is getting to expensive… and then I told my children that if it stays in the family they can all have their grandchildren and great grandchildren so on, for the future so that way none of the family members has to go stay on the beach if it comes to that. They have a place to stay till they get on their feet…you can just live on it but It's a waste to have the property and not to make use of it. So you have people in the new homes that came up on the left side of us, up on the hill, they have beautiful landscapes but you cannot eat the grass."*

Kawika: *"It's a challenge because to start a farm even on half an acre you gonna need fifty thousand dollars to start off wit because of implements and infrastructure and everything else you gotta put in place."*

Another challenge that was brought up had to do with growing food in a hotter climate. Aunty Lani shares her view of farming now compared to a few years ago. Aunty Lani: *"well you know it's getting hotter and hotter. So with the heat, the fruits and the vegetables are not ripening as fast, so the tendency to get where they need to be is slower. Very very slow, it's a big difference from last year…"*

Researcher: "*So you are having to harvest at a later time then?*"

Aunty Lani: *"Yeah. Much later and the abundance is not as much. It seems like the heat is making it not grow fast enough...-and then with my husband being retired and we bought this place it was kind of relaxing to go out there and do that you know and the nice thing about it is the weather allowed you to stay out all day long, even though Waianae is hot. Now when you go out there with the changes this year in the heat, I cannot take that heat. It seems like it is burning right through your skin. So we do what we can early in the morning and then we go out late in the afternoon… after it cools, when all that heat is kind of dissipating and its not too hot."*

A challenge that all spoke of was that there are not enough people who farm and the challenge of finding good farm workers and compensate them. Kawika: *"I don't know, I just see too much, there's just not enough people farming anymore. And everything's turning into subdivided properties now.*

Mark: *"I think another big struggle is um like what I said is just not enough people. So like one person trying to manage some land, then you need usually...it helps to have more than one set of hands. Um...so like educating people and getting people interested in it is definitely a big struggle...I think it'd be really cool to see more local people working here, but the real struggle with that is we can't...Kahumana can't pay like good wages for people that want to live off campus cuz we can pay for people to stay here and pay them a small wage. And it kinda evens out, but if you live local you're not gonna come work here and stay here for less money than you can make working somewhere else…"*

Some farmers that offer small things such as fruit picking jobs to others have had problems with the people they hire. Emma: *"In fact, I couldn't even pick up fruits from the tree. You know it just went down. And...and I live in Waianae and I born and raised here, but I know what kine people get. And my*

husband, he...he don't like nobody. Because...people...things start missing you know? Don't let em in your yard. (Both laugh) I got big dogs. And security system…It's a dog eat dog world. Even farmers can be jealous of other farmers. And would even hurt your farm, like cutting down everyone's papaya trees. You know, whatever. Whatever devious little stuff they can do, they'll do it. I really believe that."
A major challenge that was brought up had to do with stealing fruit, vegetables, farm equipment, animals and more. Margie shared her perspective on stealing and how it breaks-up some of the historical trust people shared in the community:

Margie: *"You think who is this new people walking down our street…before you could leave your things out and nobody come and still your shit on the yard. And now there is like "Oh my god"…when I was living down here like cause I know which like my neighbors and who on what street. You know what they are doing around, you know cause I like to make sure the people around on my street, are the people that are actually supposed to be on my street you know. Cause we people that were stealing around and it was just horrible. Now my neighbor across the street, he has his own neighborhood thing. You know he has his family watch certain times. Yeah cause they were stealing the fruits, the animals and all that…yeah and I used to tell the people, don't you come into my yard kids. I feel pity for you guys, that's it, one warning and my brother gonna go off on his gun. You know cause it was going on night after night. They were like stealing it all around and everybody knows the neighbors and they was like, "Yeah". But then when we hear my brother's chickens going off…yeah that's why I always ride bike a lot. I always look around, you know stuff like and see what is normally around me you know. But yeah they were stealing like all over and I'm like these frickin people have no conscious…and I even heard one of them, like peeping tommy's, I hope they get caught. A lot of the micronesians when they come down our road. Like oh get them out of here you know …yeah and they like, the stupidest thing about it is. They try to sell it to like the people that is around here. You know the farmers, they know each other and that's the stupidest part about it. I guess they think that we don't know one another but you know a lot of the farmers and the ones that grow animals and stuff, they all know each other."*

Roger too shared about the challenge of farming while people steal the fruit. Roger: *"The weed, the weed. People jumping over the fences and all that ehhh. They hungry yeah just don't get caught…dangerous way to go. But its the gate in the front. You know they knocking on the door and its always open but you go hopping over the fence without permission then well then sorry buddy, like I said*

if you get caught well that's all on you but if you don't then good for you. well just don't get caught… Biggest obstacle is the weed like those kind of weed… "

Finally, some farmers in our community are concerned with other farmers activities especially those who grow basil for exporting and spray chemicals where children are nearby. Here are some examples. Mark: "*...the basil farmers are expanding… They got a big plot down by the other farm now. And then there's a guy terracing over by not the Comp center, but Lehoku [elementary school] by the mountainside over there…yeah, I think they're gonna put basil up there too… It's crazy cuz a lot of basil farms are just in Waianae... the chemicals they spray on it...I mean there's families living around here...communities with kids and a whole lot, a whole community Ohana Ola [o Kahumana] with tons of kids that live back there and there's farms, those basil farms literally surround it. They spray, spray, and spray. I hope someday they can make legislation against that, but I don't see it anytime soon… well now farmers don't have to give you the information on what they're spraying. They're not legally binding to give that out to the public. So I think that that's one thing, but even with that, people are educated, but some people aren't educated on what these chemicals are and what its gonna do to your body. Let alone what it's...it's going in the plant then you're eating it. I mean like I think the main thing is that the community understands what's going on. You know I think that's the start. You can go and do all this legislation and stuff, but if you don't have the community support...I personally don't believe anyone is gonna follow through on it."*

Kawika: *"…one of the reasons I got into mushrooms is cuz our biggest Ag users right now is Basil farmers…And they spray for fungicide everyday out here, so my goal is, my idea is to have micro farms all throughout the Waianae Moku and growing twenty foot Matson containers or some kind of grow room with mushroom in it, so if for whatever reason next door has a basil farm they won't be able to spray because I'm growing a fungus and they are spraying for a fungus. So just trying to find other legal avenues to try and slow down the basil farmers or if not, try and get em outta here, you know cuz their not doing anything for us…"*

In conclusion, the major common challenges that people discussed included the challenge of fruit waste, selling the food they grow, and finding more people for farming. Several farmers also said that it was hard to find workers, hard to trust workers, and hard to pay workers. Farmers discussed the challenge of water, accessing agricultural water rates and working with the State on that. People felt that their crops were not safe from theft and that thieves from outside the community will come and raid farmers and,

in some cases, try to sell the stolen goods to other farmers. Finally, people in Waianae are concerned with farmers that grow food industrially using chemical fertilizers, fungicides, and other toxins especially with so many children living and going to school next door to basil growers.

Farmers in the Waianae region face challenges that are not directly about food marketing and distribution. Some of these challenges include finding more people to help do the work, agricultural theft in our region, and helping members to access agricultural water. Each of these challenges have implications for agricultural policy in Hawaii. In the case of agricultural theft, as was mentioned earlier in the comments, farmers know each other in Waianae and can come together to stop it. Several times people tried to sell KFH stolen produce and it resulted the development of internal policies about how to deal with stealing when it comes up. Kumu Vince Dodge is a long-term friend of Kahumana and also part of the food hub from the beginning. The KFH manager introduced the conversation with him about how to not enable stolen fruit and vegetables to pass through the hub. The manager was determined about stopping or not enabling stolen fruit and vegetables passing through KFH, but one more question must be asked. Why does a person steal in the first place? As a community of concerned citizens, we should also view stealing as a sign not only that an individual is doing something wrong, but a sign that there is a larger problem in society.

The KFH manager wrote about this in a field-note Sep 17, 2017: "*In my experience people steal because they need their basic needs met but also because they think that the people that they steal from doesn't care about them. I think of the time when Gigi got his goat stolen and the community helped him find it and brought it back to his farm. We had another incident where KFH grower was caught stealing on the property of one of the Kahumana staff's Auntie's in Waianae. I was ready to take it to the police but the Kahumana staff and his Auntie had a different approach. They told me that there are many people in Waianae who steal because they have an immediate need but they come back later and make up for it. That was also true in this case where the person who was caught stealing ended up being a partner with the Auntie whom the things were stolen from and they set up a new relationship with one another where they started working together. In another field note I talked about the farm hub being inclusive which means that we will accept people from all socioeconomic backgrounds. I realize that there will be challenges with that goal especially if there are more reports of stealing. My answer to Kumu Vince has been that we are working on the relationship between the Hub and The Growers to do the best that we*

can to improve those lives. I think that comes with the recognition that there are many people in Waianae who have to resort to stealing just to meet their basic needs while we can support a kind of behavior we can also not fool ourselves to think that it doesn't exist in our community…"

When KFH heard of the first case above with the Kahumana staff and his Auntie, KFH introduced mandatory memberships for all growers and visited all the new members that had not been visited yet in October, 2017. Now all members are encouraged to call the manager directly if something was ever stolen from their property and people do. A second of act stealing was reported by a member who saw it happen across the street from his house. Those people confessed to the manager and never came back to KFH. It is important that an goal of KFH is to better promote and care for people's agricultural (aina) resources including having a community informed mechanism on how to report agricultural theft and increased collaboration between KFH and the local police. That is what KFH will be promoting and passing on similar collaborations such as one in Kohala, Hawaii Island.

KFH also heard of one case where a person who worked at a large public property said they thought people were stealing and bringing it to KFH. In that case, someone higher up in the company, a Indigenous Hawaiian cultural practitioners, had given permission to the member because they too did not want to see the fruit waste; so there was no case of theft. The manager wrote about his personal opinion about stealing in a field note from Sep 15, 2017: *"…I've always thought of stealing as a symptom rather than a root cause of the problem. I am working hard to design a good social program [KFH] that can address that root cause but I'm sure the symptoms will continue to show up."* Kahumana Organic Farms also reported getting several things stolen these past two years including weed eaters and a market cash box by people who pretended they came for the hub but had other motives.

Conclusion Chapter 6

A community food hub can be a solution to many problems and perhaps the overarching effect of a community oriented food hub is that can benefit the future of agriculture in Hawaii, because the hub promotes an ongoing relationships among farmers of all ages and backgrounds to work together to improve community food security the way that Indigenous Peoples in Hawaii always did. New relationships help everyone in the long- run through endeavors such as political advocacy for small-scale farmers, price negotiations, labor help, collective problem solving, seed exchanges, and expands the

friendship circles of everyone. This Chapter has shown that a hub can greatly reduce food waste in people's backyard and help farmers spend more time on their farm instead of doing distribution and sales. Moreover, a food hub gives back to the community by creating an extra income opportunity for people who grow food. A hub can also enhance the resiliency of the community's food self-reliance because the hub sources from a large number of suppliers who otherwise would have no sales outlet as conventional distributors will not distribute their food. Not only does the hub support existing farmers but it also encourages and trains people without agricultural backgrounds in the basics of being a producer. As a result, the findings from KFH challenge the notion that food justice work cannot co-exist within a capitalist framework. Instead, the KFH example suggests that a solution to structural injustices can arise through grassroots efforts within existing social frameworks and bring changes over time.

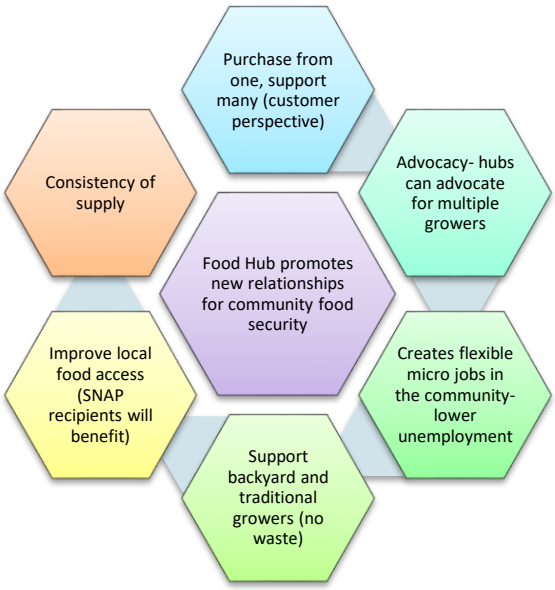


Figure 6.3 A Food Hub is a solution to many problems

The research suggests that planners can enhance community food security by working to understand and prioritize community oriented food hubs in areas with higher concentration of Indigenous Peoples. By doing that, planners address the lack of supply of local foods simultaneously as addressing other important aspect of Indigenous Peoples social well-being. Growers who utilize the farm hub in Waianae align best with Lincoln and Ardoin's (2015, 571) "subsistence" typology of farmers *"...also described as 'traditional farmers' or 'hippy farmers,' prioritize growing food to feed themselves, their family and friends, and the community. These farmers consume, trade, or give away the majority of their agricultural goods. They tend not to engage much in classic economic pathways and also tend to need*

outside income to support their farming lifestyle." According to Lincoln and Ardoin (2015) these farmers are likely overlooked in official numbers regarding food production on the island because they do not engage in classic, accountable economic pathways. They are, however, a substantial contributors to local food production even if their effect may systematically be underestimated (Lincon and Ardoin, 2015). Lincoln and Ardoin's (2015) typologies of subsistence, hobby, and leisure farmers further develop and validate the importance of Bittendbender (1993) research on Multiple Income Farm Families (MIFF's). Increasingly, these farmers' contribution to the food system is being calculated, dark numbers reduced, compensated, and systemized through the hard work of multiple community oriented food hubs.

By highlighting through empirical research how relationships and human values shape current and alternative visions of food and agricultural systems, this research has broader implications for global studies on 'food wellbeing', an approach that combines insights from food security, food sovereignty, and social wellbeing perspectives (e.g. Gartaula et al 2017). Food wellbeing provides better guidelines for food related work compared to narrow views that separate the notions of food security and community self-reliance (e.g. Kent, 2010).

The food hub concept does not solve all problems facing farmers and backyard growers. Remaining problems include finding labor and paying people to help on the farms, accessing water at agricultural rates, and protection against farm theft. A few issues can be further researched based on findings in this study. First, we as a society have to find a way to completely care for our farmers and their agricultural resources. That comes with addressing agricultural theft, building closer collaborations with the police and a mechanism in the community for reporting theft. In addition, we have to find a way of matching farmers with apprentices as many farmers have things to teach that need an extra set of helping hands and as there are many students trying to learn about agriculture and gain hands-on experience that they often do not receive in their formal education degrees. On the neighborhood level, there is a great willingness to learn new techniques and farm hub members mainly grow fruit. Future research could approach the role of food hubs in facilitating community education, training and outreach of fruit orchard management and care and teach our people how to properly care for their fruit trees. For KFH, that will be the focus over the coming year as USDA just funded a new project to provide a 12 month series of workshops focusing on fruit production, quality control and handling for the suppliers.

When working with interviews and administering surveys it became apparent to me that a relaxed way of face-to-face “talk story” conversation covers more information and understanding about the people and their farming activities in the community rather than asking pre-selected questions. Especially in the interviews by informal conversation where the interviewer is present, listening carefully, and allow comments to flow freely back and forth and can develop spontaneous responses to what is being shared as in a normal non-research related conversation. The more formal model of asking questions makes people feel stuck. When the interviewer asked pre-selected questions, several respondents answered with short answers not elaborating on their experience or feelings. Adopting an Indigenous methodology made people feel more relaxed and allowed for the KFH manager to deepen his rapport with growers. The effect of Maawe Pono reached beyond the research because it built relationships and understanding that would continue to inform the KFH manager’s hybrid roles as a policy advocate and community researcher.

Finally, the success with KFH has implications for County and State efforts to promote food security and self-sufficiency. In many of Hawaii’s valleys and beyond there are invisible growers, the silent majority of food producers, that could benefit from a community food hub as a nearby resource. A food hub can be a solution to improve access to local food through hubs without necessarily growing or importing farmers as it aggregates food from existing food producers. A hub works well for many food establishments who purchase larger amounts of local food such as restaurants hotels, cafes and grocery stores, because they want to support as many local farmers as possible but cannot practically have a relationship with each of them. Consistency and diversity of local food is also a solution for farmers’ markets operators who struggle to have a consistent supply of farmers and local foods at their markets. A hub is also a solution for many part time food producers, MIFFS, who often have to work off the farm to sustain the farm and do not have the time to facilitate their own marketing and sale. Without the hub, their food often goes to waste. The hub is a solution for people in rural areas who are unemployed because MIFFS will often hire them, their friends and family, for harvesting and cleaning services. Finally, it is a solution for many Indigenous Peoples who predominantly live in rural areas and grow their own food as cultural subsistence practitioners as the hub offers them an avenue to share the excess for they grow.

Chapter 7

Policy Priories and Considerations to Increase Local Food Production

Overview

Chapter 7 focuses on three policy priorities to increase local food production. The first section includes policy considerations through seven social trends that support farmers in local agriculture. The next section includes implications for policy by summarizing the findings from this dissertation that were adopted by the Farmers Union on a State and National level through grassroots farm policy deliberations. That section includes a discussion on the difference of policy priorities between the U.S. mainland and Hawaii agricultural debates. That is followed by policy recommendations through three priority areas for State and Federal policy and the role of planners in supporting increased food production for small-scale farmers in Hawaii. Priorities discussed include: 1) Workforce development- attracting more workers to increase the local food supply; 2) Strengthening food hubs- building food hubs' capacity to increase supply of local food; and 3) Preserving alternative farmers through local food systems policy incentives and recommendations.

Policy Considerations: Seven Trends that Support Hawaii's Alternative Farmers

This section presents some of the social trends that support local food production and, in particular, the small-scale farmers who produce for local consumption. This research has aimed to be community oriented and to use language to which growers in Hawaii's can relate. Titles of categories were established by using language spoken by growers and their allies involved in this research. Public and urban movements in support of local food did not appear as a result of planning but rather emerged as a social and environmental movement in spite of planning (Thibert, 2012). While planners can now support these movements, food planners have emphasized learning from the practitioners to support good food policy (Thibert, 2012; Campbell, 2004). What follows is a discussion that is aimed at providing policy considerations based on the findings in this research. While the discussion highlights seven key areas for policy makers to support the growth of local agriculture and alternative farming, it does not turn each of them into a policy recommendation, which would have more specifically addresses levels of policy (County, State, Federal) and the relevant agency (e.g. Hawaii Department of Agriculture). The

section on priorities includes some more policy considerations but is generally more focused on policy recommendations within three priority areas by relevant levels and agency.

1. Celebrating agriculture- the public who wants to meet farmers. There is a strong cohort of consumers who want to reconnect with the food they eat, the people that produce it, and the places where it grows. The trend is only likely to grow as the countertrend, the industrial food system, keeps growing. In academic discussions, the trend is often referred to as "embeddedness" or "moral economy", concepts promoted by scholars like Polanyi, is the central argument for direct sales by farmers to consumers. Moral economy as Kloppenberg et. al. (1996) explained is described "*as exchange justified in relation to social or moral sanctions, as opposed to the operation of free market forces.*" While this is a form of capitalistic exchange based on farmers doing well in the marketplace, it has good social consequences for producers and consumers alike. In the food system discourse, embeddedness refers to tight linkages between farmers and consumers such as community supported agriculture (CSA), farmers markets, and-farm sales and other agri-tourism activities such as farm-based bed and breakfast (Hinrichs, 2000; Winter, 2003).

The trend started with a shift in consumer behavior. The shift was mainly among affluent consumers who believe that eating authentically is to know the farmer who produced it (Hartman Group, 2008). In addition, the general public became more involved in issues that had to do with food systems especially topics such as climate change, nutrition and health (USDA, 1998). There is now a new local-, family-, and community-based ethic that stresses the values of sustainability, interdependence, environmental protection and local production for local consumption (Lyson, 2004). The local food movement encourages more local food production, jobs in agriculture, reducing transportation needs, and allowing more sustainable forms of agriculture (NFU, 2019).

In its deepest form, the trend of celebrating agriculture intersects with another trend specified below that contributes to the preservation of agriculture in Hawaii: "Helping Farmers while Learning New Skills." Some local consumers are so fascinated with local food that it leads them to further explore where food comes by becoming part of a local farm operation. Outside of this food-specific debate, there are consumer movements where people are embarking on a life as producers (Fox, 2014; Sennett, 2008). The local food movement is led by many new farmers who fit the description of a prosumers or

Do-It-Yourself (DIY) local entrepreneurs. Many of the producers in this dissertation first started as unhappy yet well-educated consumers who wanted to urgently make a difference to how food is cultivated, shared, and consumed. To make a difference they became DTC food producers.

Consumers' impulse to know their farmers and farms has changed the entire farming industry in Hawaii and many other places by giving rise to DTC sales. This behavioral change, in turn, affects several other things. For example, consider the logic of organic certification, a trust system that bring confidence to consumers that arose largely because people did not know their farmers and needed a system of rating to make better food decisions (Guthman, 1998). People who know their farmers and visit them often will no longer need an organic certification program because knowing your farmers rids the need for people to have such a third party trust system- they only need certifications for the farmers they do not know. On Oahu, farmers that rely on farmers' markets sales for a large proportion of their sales are less likely to have organic certification as they have face-to-face meetings with their customers and can personally convey how the food is cultivated. This might partly explain the shift in consumer values from organic to local. As farmers grow and rely more on wholesale and less on direct sale, they are likely to adopt organic certification in-part because people who purchase local foods in stores do not have a face-to-face interactions with their local growers.

2. Selecting fresh and unique ingredients- the trend of popular restaurants supporting locally grown in households- demand by local restaurants, chefs and stores. Chefs, restaurants, and hotels are important supporters and sometimes drivers of the local food movement. This is especially true in Hawaii where tourism makes up the largest section of the economy. The linkages among farmers and chefs are very strong in Hawaii and has given rise to popular TV shows such as "Family Ingredients" with Chef Ed Kenney from Town Restaurant- a well-known supporter of small family oriented farmers in Hawaii. In fact, before access to local food became public concern, it was a concern of the chefs in Hawaii who wanted to serve some truly Hawaiian found at their hotels. The birth of Hawaii Regional Cuisine is well documented in Yamashita (2019). The development of Hawaii Regional Cuisine started in the early 1990's, approximately ten years before community food security became a public concern:

> In 1991, twelve Hawaii chefs established Hawaii Regional Cuisine, a culinary movement that inventively blends Hawaii's diverse, ethnic flavors with the cuisine of the world. Hawaii Regional Cuisine takes advantage of the freshest island ingredients: cattle raised on the upland pastures of Hawaii Island, fruits and vegetables grown from rich, volcanic soil in

Upcountry Maui, and some of the best quality fish in the world, to name a few. The 12 founding chefs were Sam Choy, Mark Ellman, Roy Yamaguchi, Beverly Gannon, Roger Dikon, Amy Ferguson Ota, Jean Marie Josselin, Peter Merriman, Philipe Padovani, George Mavrothalassitis, Alan Wong and Gary Strehl.

Source: Go Hawaii Website

Because food products grown locally are often different from the food items in the supermarkets, chefs and restaurants become an important partner in educating residents about how to cook with unique local ingredients. Page et al. (2007) suggests that small-scale farmers sell their food to high-end hotels and restaurants to cope with the high cost of operating in Hawaii,.

Selecting ingredients that have a local story and are unique compared to the common foods in grocery stores helps hotels and restaurants develop an edge by offering a unique product to their customers (Yamashita, 2019). In the academic discussion, this development of linkages among farmers and chefs is sometimes described as taking away from the ability of local food systems to contribute authentic social change of the hungry as it relies on wealthy customers who eat at high-end restaurants and hotels. For example, consider Allen's (2010, 295) statement about food localization and justice that *"to the extent that people are trying to solve problems of tastelessness, processed foods and the numbing sameness of the food-procurement experience, local food systems can provide solutions. For other food-system issues, particularly those involving social justice, the role of food system localization is less clear."* Scholars of food justice have been critical to this movement's ability to contribute to significant social changes (Guthman, 2003). However, findings from this study show that the issue is more nuanced and that this trend can be good for the local community. Farmers in Hawaii rely on high-end markets to preserve their own existence in the industry. When farmers succeed because of sales to restaurants, hotels, and other high-end consumers, they can subsidize the prices of the food they sell to the economically poor people in the rural and urban communities. This is true for several organic farmers in Waianae, Oahu. In addition, selling local food does not constitute the only means of farmers supporting poor people. They also provide jobs in rural area where a higher percentage of food insecure, economically poor people live.

Chefs also have a large effect on the food that people eat in their homes by demonstrating and educating people to cook with various ingredients with which people are not familiar. This is a recurring theme in Hawaii regional cuisine as chefs deliberately develop cuisine for locals, not just visitors, and

produced cookbooks and TV shows that became popular locally (Yamashita, 2019). Chefs such as Roy Yamaguchi, Peter Merriman, and Beverly Gannon emphasized a cuisine for locals that was affordable and offered in places where the local population lived. Yamaguchi said the local clientele became incredibly loyal. Gannon said that people thought they were crazy when they opened a restaurant literally in the middle of a pineapple plantation. Merriman built a restaurant in Waimea town and has direct relationships with farmers Maureen and Tane Datta in Kona who have supplied him with fresh organic vegetables for over twenty years. Yamashita (2019, p29) argues that "*although the decision to locate their restaurants away from the resorts and tourist hotels caused some problems initially, it paid off over the long term, as they attracted local and national media attention and gained local clienteles."*

During this research project, the author was fascinated with the tight relationships between chefs and farmers and hearing from farmers about the high food demands of the chefs. Some restaurants and hotels have a larger budget for purchasing local food than many realize and they are not currently finding enough local supply. This is supported by studies suggesting that there is an inadequate supply of local food (Day-Farnsworth and Morales, 2011). Future studies should involve chefs at restaurants and hotels and establish good management practices for farmers that grow local food for chefs. In addition, most chefs have their own individual relationships with farmers. To make locally grown food more available and to create more opportunity for small-scale farmers, a solution could be to promote a farmers' market that is more specifically focused on ingredients for restaurants and their chefs. This idea was brought up in a Hawaii Farmer's Union meeting in North Shore of Oahu by several women leaders who want to do just that. That kind of a market could help farmers by giving them that one big weekly market they are looking for, and it would help chefs to offer unique local dishes to many of the international, domestic, and Hawaii tourist that eat in their restaurants.

3. Helping farmers while learning new skills and lifestyles- volunteers, internships apprenticeships.

Agricultural interns, apprentices, and volunteers contribute to increased local food production while receiving hands-on training and work experience on small-scale farms (Ekers. et. al., 2016; Azizi and Mostafanezhad, 2015). Over the last decade there has been a growing movement of non-paid seasonal internships, apprenticeships and short-term volunteer positions on small- and medium-size, locally oriented farms across Canada, the United States and Western Europe (Ekers. et. al., 2016). In a typical non-wage farm internship, individuals provide their labor with little or no monetary compensation, but

are often given some combination of training, accommodation, meals and a small stipend in return. Although unpaid family labor has historically been a central feature of many farming operations, there is a growing trend of non-family members working seasonally outside of a formal wage relation (Ekers. et. al., 2016).

Many locally oriented farm operators are managing to persist in a challenging economic climate through their use of volunteer, intern, and apprentice labor. Growth of non-paid work on farms is not simply being driven by economic processes but also a series of noneconomic relationships focused on non-institutional farmer training, the pursuit of sustainability and social movement building. In Hawaii, many food producers rely on interns, apprentices, and volunteers to grow and sell food for local consumption (Azizi and Mostafanezhad, 2015; Mostafanezhad et. al., 2015). The practice and values that farm hosts plays a vital role in facilitating what are perceived by both hosts and volunteers as an authentic farm learning experience (Azizi and Mostafanezhad, 2015). "A good match" between host and volunteer exists when farm hosts have the ability to recruit the right person based on sharing information such as expectations and responsibilities before the arrival of a new intern, apprentice or volunteer. With the help of the farm volunteer movement, small-scale farmers are able to continue their operations but not necessarily make large profits. Many volunteers are transient and eventually leave the farm while most farm hosts aspire to become a successful business with a skilled, reliable and long-term workforce that is competitive in the marketplace. The temporary nature of this relationship is a critical limitation of farm volunteering (Mostafanezhad et. al., 2015).

The farm represents an escape from society for many volunteers; however, increasingly farm tourism by volunteer work trade is sought by consumers who are curious about becoming producers. Access to alternative farms is also increasingly viewed as crucial amenity in modern living. Ideas of what constitute an amenity are shifting. Open spaces and farms are being sought by people as an convenience. But in early 1900 that was not the case, agriculture was being outlawed from the city by planners who established codes to move operations away from urban areas (Vitiello and Brinkley, 2013). Many farmers that receive the help of apprentices, interns, and volunteers have first-hand experience of this social trend of well-educated, professional people that seek an alternative to the corporate, stressful lives in large cities (Azizi and Mostafanezhad, 2015). While planners worked a century ago to create codes and policies that outlawed agricultural activities from urban and metropolitan areas because it

was considered disruptive to modern living, a shift in thinking suggests that the best form of modern living requires amenities of living in proximity to local food production and small-scale farmers. Currently, in the U.S. there are now agrihoods: a new type of neighborhood development based on farm-to-table living in a cooperative environment; instead of being built around a pool or tennis court, these housing developments are centered on a farm operation (Birky, 2016). In its deepest form, this trend gives farmers an opportunity to employ and engage more people in agriculture and creates new agricultural communities. In its shallow form, this trend allows millions of consumers to reconnect, even if for a moment, with how food is produced. This dissertation suggests that not only can the movement of volunteers, interns and apprentices allow farmers to preserve the farm let alone increase food production, but because farmers are conducting training and education they ultimately contribute to workforce development by growing more farmers and farm workers for the next generation. The last point is an important finding especially as farms in Hawaii and the U.S. only means of labor is the H2A Visa program which is likely unsuitable for DTC operations.

4. Spending money on local businesses means investing in local resources and communities- creating a multiplier effect. Local food encourages local spending that keeps consumer dollars circulating in each community and the community's farms. A Hawaii food self-sufficiency study shows that when people spend money locally it stays in the community and creates more jobs and economic development (Leung and Loke, 2008). For example, consider the following statement that resulted in a $12m dollar investment in Hawaii's self-sufficiency and food security strategy (State of Hawaii, 2012):

> The economic impact of food import replacement is significant. Replacing just 10% of the food we currently import would amount to approximately $313 million. Assuming a 30% farm share, $94 million would be realized at the farm-gate which would generate an economy-wide impact of an additional $188 million in sales, $47 million in earnings, $6 million in state tax revenues, and more than 2,300 jobs.

The following statement from the Farmers' Market Coalition (2016) also shows how the money spent locally has additional benefits in the community:

> Spending money at farmers markets keeps your money in circulation within the local community, preserving and creating local jobs. A 2010 study of the Easton Farmers Market in Pennsylvania, for example, found that 70% of farmers market customers are also shopping at downtown businesses, spending up to an extra $26,000 each week. This is very different from many major grocery stores where a large percentage of sales leave the community, and possibly even the state or the region. A Virginia Cooperative Extension report showed if households in Southern Virginia spent 15 percent of their weekly food budget on locally grown food products, $90 million in new farm income would be created for the region.

But there is another beneficial multiplier effect of having viable alternative farms that is not as commonly discussed. Alternative farmers' operations affect the community in ways that research is only beginning to understand. The UH Manoa study of MAO organic farms, Hawaii's largest organic farm non-profit with a central educational mission to educate youth, shows the positive effect of people's diets directly related to people working on organic farms (University of Hawaii, 2019). Alternative farms are also increasingly becoming entrepreneurial incubators that give rise to opportunities for farm workers to simultaneously test their own business ideas and become small business owners (Hinman, 2011). In his 1998 book You Can Farm, Joe Salatin suggests developing a "centerpiece enterprise" around which other income-generating enterprises can thrive (Hinman, 2011). In addition, Chapter 5 included comments from farmers that suggest expansion of local farms creates a range of related contracting jobs in the construction industry. These are just a few examples of the positive ripple effect of having thriving alternative farms. Future research could deliberately explore the issue to further understand the full effect of alternative farms in local communities.

5. Purchasing with nature in mind- spending money on climate friendly agriculture. Climate change has been a large contributor to the local food movement and the reason why many customers choose to purchase local food. This trend is not likely to change as global warming continues unabated. The effect of our diets on the climate and the premise to support local, small and organic farming has been the focus of authors such as Michael Pollan (2007). Lots of people support local agriculture not only to support more jobs and spending in the local community, but because local farmers practice a method of sustainable agriculture that relies on less fossil fuels and is more environmentally friendly (USDA, 2019). Farmers can, must, and have started to lead the work of reforming their operations to be more climate friendly; however, it is important that policy and programs support those developments. In this study, Chapter 5 includes a discussion of alternative farmers motivations and values with a strong emphasis on climate friendly agriculture.

A climate change policy that does not incorporate farmers' ability, compensation, and incentives to transition to sustainable practices could be directly counterproductive to climate mitigation efforts. In that debate too, the answer to transitioning farmers' practices is tightly connected to profitability of DTC marketing. Payment for sequestering carbon will allow farmers to produce food while battling climate

change, but these schemes have been slow to develop both nationally and internationally. Agroforestry and other methods such as permaculture can have multiple functions in supporting food production while creating healthy soils and battling climate change. The UN Food and Agriculture Organization's (UN FAO) publication series on Non- timber Food Products (NTFPs), well documented by Kamelamela (2019) for Hawaii, can be helpful for farmers in tropical and semi-tropical zones such as Hawaii to allow for the multiple benefits of food production and reducing climate change. In addition, there has been increased involvement of sustainable farmers in food sovereignty movements and governance structures to learn and promote a climate friendly agriculture through farmers' participation (Andree et al., 2019). The trend of climate friendly purchasing have also resulted in food waste being addressed and increasingly rescued and redistributed across the U.S (Midgley, 2014).

6. Eating food as medicine- reducing diet-related disease. Many people support local agriculture because of an old idea stated by Hippocrates that has now again taken on an important meaning. Hippocrates said "*let food be thy medicine, and medicine be thy food.*" In that sense, conventional agriculture and industrial food marketing that consolidated national grocery chains has promoted processed and unhealthy foods that can cause diet-related illnesses especially in food deserts. Studies show that conventional food items travel a long way to end up in your grocery store and can lose their nutritional qualities while in transport. Locally produced foods on the other hand will be fresher, nutritious, and culturally appropriate- like the diets that historically were dominant before the fast food era and diets that treated food as medicine.

In Hawaii, Dr. Shintani suggest that the Hawaiian diet has improved Indigenous Peoples health. Compared to Caucasians in Hawaii, Indigenous Hawaiians experience excess deaths from heart disease, cancer, diabetes, infant mortality, and accidents (Heckler, 1985). Dr. Shintani (Shintani et. al., 1991) argues that much of this can be diet-related. The Hawaii diet is based on fruits, vegetables, and proteins that were historically prevalent in the Polynesian diet. As people change diet back from a Western style fast-food diet to a more culturally Hawaiian diet through Shintani's program, they often become healthier and see changes such as reduction of blood pressure, reduce prescribed medicines, reduce diabetes, and reduce the risk for heart attack (Shintani, 1991). Local farms too can have a good effect on diets of the people who live in areas that are food insecure. Farms, especially community-based organizations, offer very valuable lessons for its workers. In Waianae, MAO farms' interns participated in

a health study that showed significant health improvement for workers after just one year. Measuring BMI, blood pressure, mental health, gut microbiome composition, diet, among other factors, the study demonstrated a 60% decline in the risk of contracting Type 2 diabetes (University of Hawaii, 2019).

7. Resurgence of Indigenous Hawaiian Culture- thriving backyard growers and subsistence agriculture means more food to share with everyone by food hubs. Last and not least, the cultural significance of growing food in Hawaii is increasing in Hawaii as the Indigenous Peoples movement grows. As mentioned in the discussion on MIFFS and subsistence agriculture, multiple income farm families make up the silent majority in Hawaii's agriculture but their potential impact on food security is commonly ignored by policy makers (Bittenbender, 1993; Lincoln and Ardoin, 2015). Increasingly, these farmers' contribution to the food system is being calculated, compensated, and systemized through the hard work of multiple community oriented food hubs. As discussed in Chapter 6, community oriented food hubs are a multi-faceted solution for people in rural areas who are unemployed because MIFFS will often hire them, their friends and family, for harvesting and cleaning services. Food hubs are also a solution for many Indigenous Peoples who predominantly live in rural areas and grow their own food as cultural subsistence practitioners. As the Hawaiian Indigenous culture is gaining strength, the Hawaiian way of living is also promoted and more people adopt the Hawaiian way of cultivating your own food and sharing it with friends.

Implications for Policy: Different Priorities in the U.S. Mainland and Hawaii

The author finished a week of policy related work on the U.S. national level as a member of National Farmers Union (NFU) 2019 Policy Committee. The following section describes some lessons learned from the experience with the NFU Policy Committee in 2019.

Lessons learned from National Farmers Union. NFU's 2019 Policy Committee met in Washington, D.C. January 7-11 to begin the organization's policy-setting process. Over the course of the week, the committee met with congressional staff members and industry experts to discuss important agricultural issues. Additionally, the committee also began editing NFU's Policy Book to reflect current concerns and priorities. These changes were presented to delegates at NFU's Convention in March, 2019 where they were debated. The members of the 2019 NFU Policy Committee are Marcy Svenningsen of

North Dakota, Wayne Herriman of Oklahoma, Todd Hagenbuch of Rocky Mountain (Colorado, Wyoming, and New Mexico), Steven Read of Minnesota, Oren Jakobson of Wisconsin, and the author from Hawaii.

The event afforded an opportunity to reflect on some of the different priorities for agriculture in the U.S. mainland compared to the food system in Hawaii with small-scale, diverse, locally oriented farmers. While many policy objectives and programs affect agriculture as a whole, the tasks of the NFU Policy Committee was also to suggest some Special Orders of Business or policy priorities for the organization. The nine priorities adopted by NFU in 2018 include:

1. Immigration- the struggle to identify enough available, qualified, and eligible workers. The only solution to address domestic labor shortages in agriculture is the H-2A visa program but it provides only 10% of labor needs.
2. Leading the way on climate change- food security and livelihood of family farmers is jeopardized by climate change and more frequent and severe weather events. Solutions would include renewable energy, implementation of carbon sequestration, soil health and climate-smart production, improved water management and conservation practices.
3. Livestock production- concern for imitation livestock product from synthetic and tissue engineering meats. Solutions would be labeling that is truthful and not misleading and establishment of labor new requirement.
4. Trade policy- free trade agreements fail to protect family farmers and ranchers from unfair trade practice. Future trade agreement solutions should focus on increasing agricultural exports and ensure domestic sovereignty for farm programs while limiting imports of cheap, low-quality agricultural products.
5. Farm Bills- the primary objective of national agricultural policies are to protect net farm income in challenging economic times, improve the quality of rural life and increase the number of family farmers. The solutions include a twelve specific supports requested for the next farm bill including expanded funding for safety net for farmers, insurance programs, nutrition programs against hunger, conservation practice, and dairy.
6. E30- all American auto owners should have the opportunity to lower cost of fuel by fueling with 94 octane Premium E30 ethanol blends as an alternative to gasoline.
7. Dairy-dairy farms are an important segment of the nation's economy but support is urgently needed as the last four years have forced producers out of business. Several support mechanism

was suggested for dairy including improved insurance and safety net, passage of Dairy Premium Refund Act, risk management policies for dairy farmers and programs that account for actual cost production.

8. Crop Insurance Enhancement- American farm economy has seen steady decline of farm income and USDA insurance program keeps having challenges of implementation to fully meet farmers' needs in a timely manner. NFU urges the creation of a mechanism farmers can voluntarily use annually to enhance individual farmers pricing inventory while enhancing their land's marginal soil.
9. Cooperatives- tax reform helps family farmers that sell to cooperatives but multinational grain companies have worked to undermine this provision in Washington DC. Repealing the original tax reform would have dire consequences for cooperatives.

In summary, NFU established nine policy priorities in 2018. The NFU staff was helpful in further informing the 2019 Policy Committee as to the logic and criteria behind these priorities. The number of priorities is important. If there are too many, each one gets less focused and, if there are too few, than urgent action items for policies fail to be included. The priorities have to be urgent and the proposed solution has to be clear. If there is no clear solution then the issue does not qualify as a policy priority. NFU staff further informed us of a few aspects of negotiations. All in all, the impression is that farmers do not have very much influence in Washington D.C., but it is important to know that they have some through the work of NFU, the American Farm Bureau Federation (AFB), and other farm organizations including the including the Young Farms Coalition. Folks generally did not feel the political orientation of a farmer, whether Democrat or Republican, made much difference. The committee members were encouraged not only to think of ideal solutions but also, if the ideal is not reached, "*what would we be able to live with?*" Furthermore, there are different ways that farmers can get what they want. Once policy results in new legislation, the issue is not over. At that time it becomes a matter of implementing the policy in a way that makes a difference to farmers- there might be more "battles" at this stage to ensure that the farmers' needs are met in the implementation phase. The Committee asked the staff how it is to work with these issues in Washington D.C. and they said "you have to be eternally optimistic" and "the battles go back and forth continuously." Finally, the NFU staff posed a an important question to reflect on policy solutions i.e., "if you're not going to ask for something big, then why ask for anything?"

The number one issue for current farmers in the U.S. mainland and Hawaii has to do with availability of skilled labor. President of AFB Zippy Duvall said at the 2017 Minnesota Farm Fest policy round-table "*as I have traveled the country in the 45 states that I have already been to the number 1 issue I hear from farmers is labor. I mean they get up in the morning wondering who is going to be out in the yard ready to go to work with them. And I have heard from Idaho, to Colorado, to Kansas, to California all the way to Maine and Florida. My son went to college and my daughters, and they are educated. They come back to farm and we want them to be farmers but the only limiting factor they have is labor. Cause they have the land, the water, they have everything available but they cannot expand their operations because there is not enough labor*" (American Farm Bureau, 2017).

That has also been the experience of many farmers in Hawaii as we have seen from the stories shared by farmers in this dissertation. Especially when farmers do well and want to expand their production, labor shortages become an obstacle that hinders growth and ultimately results in a failure of policy to promote increased the local food production. There are no great solutions to the labor problem. In most of the U.S., the solution has to do with immigration and allowing more people from Central and South America to enter the U.S. with a temporary Visa for seasonal work. While seasonal foreign labor is a solution for some farmers in Hawaii, it is not a common practice for farmers that engage in DTC marketing. As a result, in 2018 NFU adopted a policy priority concerning family farmers and immigration. In this dissertation the author has documented the practices of local and small-scale food producers that receive labor help from volunteers, interns and apprentices while educating and training them on their farms. Some of these volunteers, interns and apprentices become farmers and farm employees but currently small-scale farmers are disproportionally bearing the burden of educating and training these people. DTC farmers are often young farmers, new and beginner farmers, well-educated, and have daily social engagements with customers and the community. They need more labor to expand their operations; the extra help is often needed, however, in areas such as marketing, sales, financing, and public relations. These demographics and farmers' needs further would suggest that they need something different from seasonal immigrant labor, because a central aspect of their operation has to do with educating connecting directly with customers about fresh and healthy foods.

As a member of the 2019 NFU Policy Committee, the author brought this up as a potential policy priority, but it was voted down by other members because it did not receive wide agreement or support. Instead, the Committee proceeded to discuss reform to make immigrant labor more available to farmers. While everyone in the room agreed on the problem, the Committee could not produce solutions that were effective because most family farmers in the room (the Committee was made up of family farmers) felt that the proposed solution from 2018, to improve H2-A Visa program, was rendered unavailable for family farmers anyway.

After a long discussion, the initial discussion about developing alternatives to immigrant farm labor circled back. The new problem formulated was that was that while many family farmers can afford to pay a livable wage for skilled agricultural workers, there are not enough people attracted to work on farms. The author shared that the situation in Hawaii is different partly because it is an attractive tourist destination and living on farms is attractive for people locally because housing prices and rents are expensive. While visitors come and go, Hawaii needs to train a workforce in agriculture that wants to stay in Hawaii and work in agriculture more than for a temporary period. Based on that, the Committee suggested we needed to come up with a more attractive farm labor package with solutions like subsidized worker salaries to increase agricultural pay compared to other jobs, and potentially offering tuition credits for working on farms. As a result, the Committee presented a policy priory for 2019 on labor (see Appendices 5- Family Farming and Farm Labor). The measure was passed at the 2019 NFU Convention and published online (NFU, 2019). The priority on labor, while mostly focused on the H-2A Visa program also contains language to develop alternative strategies quoted here: "*Additionally, Congress should take action to attract U.S. citizens to jobs as agricultural workers and acknowledge the importance of educating interns and apprentices on farms as a pathway to increased availability of skilled agricultural labor.*" While the author played a part in suggesting the language, the priority would not have been passed at the National Convention policy discussion if other family farmers did not agree to it. Other language that was added to the NFU 2019 Policy Statement and supported by this dissertation, include:

1. Point 5- Local Food Systems- The local food system has many benefits including: X. Interns and apprentices educated on locally-oriented farms results in improved farm viability, larger pool of skilled agricultural labor, and more beginning farmers (Article 1, Section A).

2. Point 6- Beginning Farmers and Ranchers- We support: XVII. Funding for farmers and ranchers to educate interns and apprentices on their farms (Article 1, Section A).
3. Point 2 Land Grant Universities and National Institute of Food And Agriculture- We support: V. The ability to earn college credit through continuing adult and extension education programs (Article 11, Section B).

Coming back to Hawaii. The author had originally thought it would be a good solution for a government programs to cost-share current training expenses of interns and apprentices on farms. As suggested earlier, however, lessons learned from NFU, perhaps the solution was not big enough. As the author came home to Hawaii he started writing another grant: a project to train twenty apprentices on ten different farms. Feedback from farmers suggested they liked the idea of a government cost-sharing program for interns and apprentices on farms but many of the farmers also said that solutions should make a bigger impact and help farmers better in the long-run. Farmers asked for a more long-term solution to the problem. As a result, what evolved was an idea of a farm employee-training program that would better reflect the long-term needs of farmers. The discussion about an apprenticeship program as a solution was often focused on training future farmers and giving them the best skillset to be successful. This dissertation argues that the farming skillset and mentorship is best received when people are immersed in a farm operation, but that idea is not always received well by educational programs. As the discussion was brought up to frame solutions with existing educational programs, ideas were often diverted from resolving the problem of labor shortages by current small-scale farmers who are urgently trying to expand to mid-size operations to survive financially. Participatory engagement of analyzing problems and appropriate solutions with farmers address several important aspects of community-oriented research. To be functional, this dissertation wanted to allow people involved in the study to validate the results and also evaluate the proposed solutions. The farmers who intended to be part of the new grant project wanted something different than what the author proposed. The author took the suggestion of going back to the drawing board, visiting with each of them individually.

Aside from the labor shortages, the issues facing farmers in the U.S. mainland are different from those facing farmers in this study mainly because Hawaii's local farmers are 1) not single- commodity farmers and thus not covered by the Federal price protection policies, 2) they are not single- commodity farmers

and thus not covered by safety net or insurance products, and 3) small-scale, diversified farmers that follow principles of sustainable agriculture to produce more food to meet the high demands for locally produced foods. Future research could explore how the protection mechanisms of safety net and disaster insurance products developed for conventional family farmers on the U.S. mainland can be extended to small-scale and diversified farmers that make an income in the local food economy. Disaster insurance is especially urgent in Hawaii since the floods, fires, and lava outbreaks in 2018 caused farm closures.

Policy Recommendations: Three Priorities for Hawaii and the U.S. Local Food Policy

Based on the work with HFUU, NFU and many of Hawaii's farmers, this dissertation offers three policy priorities for planners to improve food security, agricultural self-sufficiency by addressing the economic wellbeing of farmers who grow food for local consumption.

Priority 1) Local Food and Self-Sufficiency Programs. This issue is much more important to Hawaii than farmers in the U.S. mainland. On a federal level, the Local Food and Marketing Programs (LAMP) constitutes the funding support available to farmers that grow food for local consumption. On a State level, food security and self-sufficiency strategy (State of Hawaii, 2012) constitute efforts and funding for farmers that grow food for local consumption. The 2018 US farm bill support for LAMP- including the Farmers Market and Local Food Promotion Program (FMLFPP) and Value-Added Producer Grants (VAPG)- and the Specialty Crop Block Grants (SCBG) maintain the same budget level as 2014.

The US Farm Bill that was approved early 2019 and maintains the same appropriations for LAMP but allows some part of the total funding to be increased by partnerships for example with State funding. This study suggests that this needs urgent action because there are many beginning farmers who cannot currently commit to a loan or credit but who are applying for these available grants. To increase the funds, the Hawaii Department of Agriculture (HDOA) must take action to leverage 2019 US Farm Bill LAMP and SCBGP nonfederal funds through partnerships to increase the total amount of funding dollars available for Hawaii's farmers. Small diversified beginner farmers must receive the largest part of these grants as it provides start-up financing, to leverage their existence in the in the beginning years when they have not built up the equity to survive an income decline or climate and weather disaster. Furthermore, it is important for the Hawaii Department of Agriculture (HDoA) to do more than just

provide workshops to inform farmers about grant opportunities- many people who would do well with these grants cannot attain them because they need assistance with grant writing.

As Mrs. Hurd mentioned, the Kohala Center on Hawaii Island has hired a grant writer to assist farmers to write business plans, seek funding and expand. While the author realize the limitations, there are other explanations too. There is a large social movement around food and agriculture, the local food movement. The last two decade have led to the birth of many more farmers and even more prospective farmers. The social values and motivations this movement are very different compared to farmers before it resulting in different markets such as the DTC trend. From an advocacy point of view, when practitioners do not fully understand the lived reality, challenges, and priorities of farmers in local food systems, policy cannot improve farming and implementation of food security fails. That is why the research design in this study was participatory so that the farmers and their workers themselves can help bring-up the relevant policies needed. Moreover, another recommendation for HDoA would be to improve technical assistance for small-scale family farmers to apply for grant programs. This study also suggest adopting Ms. Hurd's idea of scoring "additional" points for farmers who cannot afford to hire professional grant writers. Alternative farm intern Chandra feels that the movement of interns and apprentices on farms results in more young farmers. Chandra: *"Well you know you hear about all these young people…or in my life I encounter a lot of young people, like the other interns here, who know that is what they want to do with their lives. Like start farms and do this. But the economic feasibility of such a thing, it is very very challenging. It's like starting any other business. Just because it is farming, it is not in any way different from any other business... I think one of my challenges has definitely been the fact that I am not an intern who is hoping to be a farmer anytime in the near future or possibly never at all. And I think internships are geared towards that…well one of our interns here is like looking at land. She knows she wants to do dairy, she knows she wants to do cheese with sheep probably. And in my previous volunteering things other young farmer intern people that I meet they…this is a chosen thing. Maybe it won't happen, as we said, this is not…this is a big commitment. I mean the thought of buying land, that's huge."*

Business classes were recommended from one farmer to another as discussed in Chapter 5. In other states, farmers and educational initiatives collaborate closely. This is especially the University of Washington extension program. This was evident from the authors trip to Washington State and visiting

farmers on Whidbey Island. All three farmers visited had benefitted from workshops with the University especially concerning farm business viability and food safety for small-scale farmers. Farmer Laura from Whidbey speaks to this. Laura: "*I think there's lots of resources to farmers to help them to be better business people. And I'm not a business person, so I am learning this. And so my impression is that lot of farmers that don't do this go out of business. And that's why there are so many kinds of classes. And the class work is, you know, so so. Well you would know this, it's sort of like a farmer doesn't have time to take an extended long-term class, and they may or may not have the discipline to read the material for class. And so these services are trying to make it work in a format and a timeframe that works for farmers."*

Laura's husband George's speaks on the same topic. George: "*Yeah. And people you know, like I've gone to a lot of workshops. There is an organization that might be interesting to you. It's in Mt Vernon and they call it an abbreviation it's NWABC and they get dollars from US department of agriculture. They get grant money to do this. Sometimes they work in conjunction with Washington State extension. So what they do is to provide services to small farmers to try to make it viable. The Washington University system got extension, and that's a land grant university. And so that profile is to provide service to support the economy of the state that was kind of the mission of it. And so that extension service in Washington is pretty strong and pretty cool. So they would tell you stuff like 'you need to know your cost of production' and so a lot of it is knowing that I need to do that and figuring out how to do that."*

Moving on from grant-writing and business consulting but staying in local food systems, the objectives and policies for the agricultural economy for agriculture currently listed in Hawaii Revised Statutes Title 13, Planning and Economic Development, Chapter 226 of Hawaii's Revised Statues (HRS 226-13). Currently the three objectives listed are 1) Viability of Hawaii's sugar and pineapple industry, 2) Growth and development of diversified agriculture throughout the state and 3) An agricultural industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic and social well-being. There is no mention of food production for local consumption (HRS, 2019). The second section of the planning act for agriculture reads *"to achieve the agriculture objectives, it shall be the policy of this State to:"* point 13 reads "*Promote economically competitive activities that increase Hawaii's agricultural self-sufficiency, including the increased purchase and use of Hawaii-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D-104*"

(HRS, 2019, 226-7). This study suggests that food production for local consumption is a stand-alone objective because it is a different objective than any of the three existing objectives.

Hawaii's Food Security and Self-Sufficiency Strategy (State of Hawaii, 2012) was meant as a first step to improve food production for local consumption. It adopted a two-tear budget of $5.90m for FY 14 and $6.70 for FY 15 with targeted investments in food safety projects ($0.80m annually), food marketing projects ($1.00m annually), and development of legislation for the 2013 Legislative Session to fund and establish the agricultural development and food security program ($3.50m annually) but no funds targeted toward increasing local food production, increasing viability of small-scale farmers, or improving support for agricultural workforce development. A better example, in terms of setting goals and targets for food self-sufficiency, is the "Local Food Initiative" in King County, Washington. It has an impressive set up with dual goals of improving the economy for farmers and business while improving access to healthy and affordable foods in low-income counties. Their targets for increased local food production intended to increase 1) the number of acres in production, 2) the number of farm operators, 3) the number of new and beginner farmers, 4) to enhance recruiting, training, providing special technical assistance programs for new and beginner farmers, and 5) the number of locations for healthy affordable foods (King County, 2015). Setting clear targets like those of King County will allow each of the priority areas its own budget and an evaluation component to measure progress. For Hawaii, planners need to promote targets, allocate funding, and start tracking the progress toward the goal of increased food production. In addition, planners ought to prioritize the exploration of an incentive scheme that rewards small-scale farmers for who grow food for local consumption rather than exports. What follows are a few other efforts that could help expand small-scale farm viability for farmers who grow food for local consumption:

1. Funding assistance for transportation and marketing expenses of small-scale family farmers to attend farmers markets and to deliver their own product to final consumers such as retailers, and restaurants. While the number of farmers' markets have risen because of the high demand for locally grown foods, financing farmers' expenses that are directly related to attending markets will ensure that more farmers sell their products at farmers' markets.
2. Public institutions to purchase a select portion of local foods from regional and local food hubs- the Department of Agriculture has been slow to develop incentives for small-scale farmers to be

included in their farm-to-state program with regards to purchasing local food for public cafeterias.

3. Compensating farmers who divert food waste away from Hawaii's landfills through composting and recycling programs on their farms.
4. Encourage insurance and disaster relief products for small-scale and diversified farmers who do not grow a singular commodity but a variety of fruit, vegetables, meats, poultry and dairy.

Agri-tourism is a significant income making opportunity for small-scale farmers in Hawaii that grow food for local consumption. It also revitalizes Hawaii as a tourist destination. Hawaii Revised Statutes Title 13 chapter 205 Land Use Commission permits agricultural tourism including overnight stay on farms under permissible uses within agricultural districts but only on Maui: "*(14) Agricultural tourism activities, including overnight accommodations of twenty-one days or less, for any one stay within a county; provided that this paragraph shall apply only to a county that includes at least three islands and has adopted ordinances regulating agricultural tourism activities pursuant to section 205-5; provided further that the agricultural tourism activities coexist with a bona fide agricultural activity. For the purposes of this paragraph, "bona fide agricultural activity" means a farming operation as defined in section 165-2"* (HRS, 2019). Agricultural use refers to parcels devoted to agricultural activities. On Oahu the Board of Water Supply has a set of rules for farmers to access agricultural water that only permit a single unit: *To qualify for Agricultural Quantity Charges, a customer must submit a written application to the Board of Water Supply and furnish satisfactory proof that they are engaged in agriculture on a commercial basis. Only one dwelling unit will be allowed on a meter qualifying for the agricultural quantity charges. To continue to qualify, the application must be renewed each fiscal year"* (BWS, 2019). Tourism on farms through tours, meals, classes, camps, and bed and breakfast stays must be permitted and encouraged. But currently tourism activities of farms are permitted only in Maui and on Oahu, the Board of Water punished farmers for having more than a single housing unit. Furthermore, to increase farm to school tours, grant programs could focus on funding the transportation cost for public school groups who want to visit farmers but cannot afford it.

Several farmers in this study qualified for agricultural water rates in the past but could no longer qualify because they had a separate unit for bed and breakfast and labor in off-season. Even in cases when the extra unit was legally allowed, BWS withdrew agricultural water rates resulting in at least a $400

increase per month for farmers on less than one acre. The extra expense reduced the small-scale farmers ability to maintain a bona fide agricultural activity. A solution is needed to address this inconsistency in County and State policy and regulations. It seems urgent that county level regulations on agricultural water rates should be aligned with state level regulations. Water rules should not punish farmers who are growing food for local consumption and make them choose tourism or food production as an agricultural activity but rather tourism activities should be allowed to coexist with bona fide agricultural activities.

In fact, water and utility companies should be more proactive to participate in food planning efforts for local food and try to set objectives and policies that encourage increased local food production and increased community food security even if that means lowering the agricultural rate for farmers. Lowering the rates would be of great value to farmers as water meter installations, backflow devices, and monthly water charges constitute a major fixed and variable cost to growing more food. As a principle, it would be more fair to Hawaii's farmers if water expenses were subsidized to reflect the cost of those utilities as on the U.S. mainland in order to promote fair competition among farmers. Farmers in this project often felt that their prices for water and electricity were uncompetitive because their monthly utility expenses were disproportionally higher than their counterparts in the US mainland. Preferential electricity rates should also be extended to farmers to ensure fair competition. Currently the cost of electricity is higher for Hawaii's farmers compared to the U.S. mainland.

This study explored the idea of incentivizing local food production. Incentives could offer a reward to farmers who have met their targets of increased local food sales from the previous year. Targets can be measured in pounds and dollars- all farmers in operation keep this information available. One of the challenges of incentivizing increased local food sales for farmers is that there is currently no system in place to track farm progress and incentivize increased food production for farmers. Many of the existing institutions that farmers engage with, including County level water and utility entities and the HDoA, have historically taken on roles that make them unpopular with many small-scale farmers. Advocating for small-scale farmers is partly an institutional problem.

A better idea would be that the Farmers' Union and Farm Bureau Federation could to operate and support an incentive program. While the author understands that it is easier to find problems with the

idea of an incentive mechanism than to seek solutions, efforts in this direction would directly support many small-scale farmers and encourage export-oriented farmers in Hawaii to transition to the local markets if they so desired. More research on implementation of an incentive scheme could evaluate the connection between a scheme and increased local food production and supply. Table 7.1 summarizes the thirteen policy recommendations that was discussed in this section of the priority 1 of strengthening local food and self-sufficiency programs. Policy recommendation number five draws from the discussion on alternative farmers organizational lifecycles in Chapter 5. For item five, a more comprehensive list of specific policy recommendations can be found in table 5.2 in Chapter 5 for each farm operation stage.

Table 7.1 Policy Priority 1: Local food and self-sufficiency programs

Priority Area	Summary	Recommendation
1.Increase funding from federal LAMP Program	The 2019 US Farm Bill maintains the same appropriations for LAMP but the total funding can be expanded by partnerships for example with State funding.	Hawaii Department of Agriculture (HDOA) must take action to leverage 2019 LAMP funding
2. Grant writing assistance for alternative farmers	Hawaii Department of Agriculture (HDoA) should do more than just to provide workshops to inform farmers about grant opportunities	Funding be made available for small-scale and alternative farmers to have access to one-on-one business consulting and coaching provided by HDoA, CTAHR or contracted by third party.
3. Hawaii Revised Statute- planning act: agriculture	HRS Chapter 226 title 13 planning and economic development for agriculture , there is no mention of food production for local consumption among the three existing objectives.	In the HRS, food production for local consumption should be a stand-alone objective because it is a different objective than any of the three existing objectives.
4. Accurate targets for increased local food production	Targets for increasing numbers of operators, acres, beginner farmers, locations with healthy food etc. were absent in Hawaii's food security strategy from 2012.	For Hawaii, planners and HDoA need to set support setting target, allocate the funding, and start tracking the progress toward the goals.
5. Meet the farmers where they are at	None of the $12 million appropriated toward increasing local food production, increasing viability of small-scale farmers, or improving support for agricultural workforce in the Hawaii's food security strategy from 2012.	It is important for HDoA to increase funding based on where the farmers are at in their operation whether they at just starting or growing. That means making funding available for increased small-scale farm viability and agricultural workforce development.

6. Farmers market subsidies	The decline of income from farmers market discourage farmers to participate in them.	Funding for farmers that attend farmers markets to cover expenses of gas, permit fees, and time spent away from the farm.
7. Diverting waste from Hawaii's landfills	Multiple farmers are currently picking up food waste from local food businesses but not recognized for diverting waste from Hawaii's landfills.	Compensating farmers who divert food waste away from Hawaii's landfills through composting and recycling programs on their farms
8. Farm to State	The HDoA and HDoE have not developed incentives for small-scale farmers to be included in their farm-to-school program with regards to purchasing local food for cafeteria's	Public institutions such as schools and prisons to purchase a select portion of local foods from regional and local food hubs and small-scale and alternative farmers.
9. Whole Farm Disaster Insurance	Alternative farmers who grow food in a non-conventional way cannot access most of the insurance products available to conventional farmers and are disproportionately burdens by natural and manmade disasters.	Encourage insurance and disaster relief products for small-scale and diversified farmers who do not mainly grow a singular commodity but a variety of fruits, vegetables, meats, poultry and dairy
10. Farm-to-school	Schools would send more children to visit and learn at the farm if money was available for school bus transportation.	HDoE could focus on resolving the transportation cost for public school groups who want to visit farmers but cannot afford it
11. Agricultural water and Bed & Breakfast on farms	While farm tourism is an approved activity by LUC, and farmers can have multiple dwellings on small-scale farms, the Board of Water allow only one dwelling unit per water meter to qualify for the agricultural quantity charges.	The Board of Water must amend their rules to be consistent with the goals of scaling-up food production and in particular allow farm tourism operations to access agricultural rate water.
12. Water and electricity rates	Hawaii's farmers are experiencing disproportionate costs of water and electricity compared to farmers in the U.S. mainland. Farmers who do not farm conventionally lose their access to agricultural water.	Water and utility entities should be proactive lower the expenses such as water meter installations, backflow devices, and electric charges for alternative farmer to grow more food and for subsistence farmers.
13. Incentivize farm growth on the farm level	There is no incentive structure to reward farmers who are scaling-up and contributing to Hawaii's food security.	HDoA to reward farmers who show increase in production over consecutive years

Priority 2) Attracting More Workers to Increase Local Food Supply. The labor issue is of great importance in Hawaii and the U.S. mainland. In Hawaii, the demand for locally produced foods from farmers markets, restaurants, hotels, retail stores and schools, far outweighs the local food supply. An increased number of farmers' markets has resulted in less income for each farmer from each market. As mentioned above and as evident from many stories share by farmers in this research project, the single and most important barrier to increasing food security is the availability, stability, and affordability of a skilled agricultural workforce. That is what prohibits farmers from satiating the demand for local food and to scale their operations to be more economically viable. Chapter 5 illustrated many examples of how farmers raise their own workforce on their own budgets by training volunteers, interns and apprentices. Figure 7.1 shows labor as the biggest need from the HFUU survey (in addition, figure 8.11 in Appendices 5 shows labor as the biggest challenge for HFUU farmers).

Figure 7.1- Most pressing need

Living on farms as a strategy to attract farmers and farm workers. In a 2015 report to Congress on local food systems, Low et. al. (2015) shows that selling to local consumers through farm stands, farmers' markets, or CSAs is labor-intensive and farmers with DTC sales employ significantly more labor than conventional farmers. Because farms that market through conventional channels require less labor,

these farms can scale-up before labor must be hired; however, farms using DTC marketing would need to begin hiring labor at a smaller scale of production (Low et. al., 2015). In Hawaii, small-scale farmers have reported difficulty in finding labor to grow their operations. A State mandated report identified lack of farm worker housing as a major obstacle that increases the cost of local food production (State of Hawaii, 2012); the problem is further detailed in the report:

> (…) many dwellings located within the Agricultural District are transient vacation rentals (TVR) or bed and breakfasts (B&B) not connected with a farm or agricultural activity that generates income. In many cases, a token amount of farm income justifies allowing additional dwellings within the Agricultural District. These conditions lead to a lack of farm worker housing by accelerating agricultural decline due to farmers' disinvestment in their farm operations in anticipation of development and the selling of agricultural lands to non – farmers whose primary objective is income producing TVRs and B&B. The problem thus intersects with the high cost of living in Hawaii and farmers' income opportunities arising from renting houses to residents and tourist instead of housing labor.

Small-scale farmers and experts in Hawaii identified availability of labor and farm worker housing as a major factor in increasing local food production (State of Hawaii, 2013). Farmers and agricultural experts described the current state of labor as dismal. Challenges include a lack of both unskilled and skilled labor; non attractive pay in the industry; confusing labor laws; the inability to retain seasonal workers; and language barriers with migrant workers. Tom McDonald CEO of the Kahumana Organic Farms (KOF), program operating in the Lualualei Valley in Waianae, argues that "*if we collectively can figure out how to create more housing for farmers then we'll definitely attract more people to the industry. But, if you're a farmer. This is not so much different from any production industry …If UH wants to attract students and young faculty it's got to provide housing. People just can't do it on their own there is not enough housing.*"

As discussed Chapter 6, Kahumana also operates a farm hub to support community and backyard growers with marketing and sales. In 2017, three farm families who were members of the farm hub program had to move from Waianae to Palolo because of the lack of affordable rental housing. As a result, approximately $30,000 in annual sales and 25,000 lbs of locally grown food was lost. McDonald further said that *"…we need to change the building code and somehow provide an extra incentive, a financial incentive, so that farmland can also be used as workforce housing for farmers.*"

More evidence that farm housing is an important issue for farmers comes from the Hawaii Farmers Union United (HFUU) 2018 membership survey. After rating over forty statements, members were asked, in an open ended question, which item they thought was the most important. A total of seventy-

eight (n 78) comments were given and organized into themes. The strongest theme was concerned with "Living on Farms", the second most important theme was food hub and marketing and third was political and legislative focus (see all comments in Appendices 5 in section HFUU Priorities). Twenty four percent of small-scale farmers felt that living on farms is the single most important issue facing local agriculture in Hawaii. Living on farms is a strategy to attract skilled farmer and farm workers in Hawaii. The reasons for farmer and labor housing being the most important included reasons such as always having a person present on the farm to monitor daily changes and farmers wanting to offer a whole package solution for workers including rent to attract reliable labor and to move away from transient agricultural volunteers. Farmers also feel that living on the farm allows workers more time to focus on production and that homelessness has become such a big problem in their communities and theft is becoming such an alarming issue that living on the farm would provide better security so that crops would not be stolen.

C&C of Honolulu zoning requirements for agricultural dwellings. Current zoning codes with the City and County of Honolulu allow for small-scale farmers to have one single farm dwelling unless they own more than five acres of land. Farmers who own more than fifteen acres of AG1 classified land or six acres of AG2 classified lands are also allowed to develop agricultural cluster(s). Under state law, "Farm dwelling" is defined as a single-family dwelling located on and used in connection with a farm, including clusters of single-family farm dwellings permitted within agricultural parks developed by the State, or where agricultural activity provides income to the family occupying the dwelling (HRS Chapter- 205). Within agricultural clusters, detached, duplex and multifamily dwellings is permitted.

For the City and County of Honolulu zoning regulations, sec. 21-5.250 states that: a) In the AG-1 district, the number of farm dwellings shall not exceed one for each five acres of lot area. In the AG-2 district, the number of farm dwellings shall not exceed one for each two acres of lot area; and, b) Each farm dwelling and any accessory uses shall be contained within an area not to exceed 5,000 square feet of the lot (City and County of Honolulu, Ord. 99-12).

The City and County of Honolulu also has two legally approved options for farmers on less than five acres who want to expand beyond a single dwelling unit. Sec. 21-8.20 of City and County of Honolulu (2018) Land Use Ordinance states that "*Ohana dwellings have been allowed to encourage and accommodate extended family living, without substantially altering existing neighborhood character and one Ohana dwelling unit may be located on a lot zoned for residential, country, or agricultural use, with*

some restrictions." In addition, the City and County of Honolulu permitted Accessory Dwelling Units (ADUs) for all residential districts to increase the number of affordable rental units and alleviate the housing shortage in the City (City and County of Honolulu, 2015). Thus, it appears to be options for the development of additional farm worker housing on farmland, but this does not resolve other factors that make it difficult for farms to attract the worker population needed to double or triple local food production in Hawaii.

The discussion on farm worker housing has been unresolved for a long time because of concerns with gentleman farmers and fear of prompting residential developments in the country. To find out more about gentleman farmers, the author visited a small-scale farmer who help them grow food in Maui. The following is text from a participant observation by the author in 2019 in Maui.

> Met with alternative farmer Robert who grows food at several large gentleman estates on agriculturally zoned lands in Maui. He started as the landscaper at one of them and is now growing food commercially at four properties. Each property is about 3 acres with a very large luxurious house. Houses are likely worth 5 million and more. Owners only come for a few months in the winter and most of the year houses are empty. He grows mangoes, bananas, avocados, citrus, dragon fruits, starfruit. On two properties he plants and harvests and in the other two he gets to harvest whatever he likes. The job is over 40 hours a week he is compensated with free rent, a monthly stipend, and all the food he grows. Every week he harvests fruits for farmers market. He has been attending the market for 10 years. He takes notes of everything he harvests and send them to the house owner. House owners lets him keep the proceeds and use the receipts for qualify for agricultural water rates. More and more house owners are contacting him to grow food on their house because of the results he has been able to bring and also his pleasant and humble personality. He performs many other services for house owners around the year including arranging electricians, plumbers, pool cleaners, pick up at airport, forward their mail to them. He views his work as the Robin Hood food hub model of redistributing wealth from the rich to the farmers and their customers and the large house owners like it too because it reduces waste in their backyard and contributes to something meaningful.
>
> I asked him if he thinks his arrangement can contribute to food security. He said yes because he has been able to harvest and bring all the local fruits to the farmers market every week for ten years. He foresees an immense increase in scale in his production so he brainstormed taking on more farmers markets. He did say that no Hawaiian people except himself live in those communities.
>
> Source: extract from authors participant observation

While some gentleman farmers contribute to the local food supply by letting farmers such as Robert farm on their land, it is a very unpopular argument to make especially given the housing crises and how it disproportionally affects Hawaii's Indigenous Peoples in a negative way. It is, however, unfair to small-scale and alternative farmers that the farm housing debate is stalled because of the presence of absentee house owners in Hawaii, which, in turn, prevents farmers from attracting a reliable workforce. While the policy objectives in the Hawaii constitution and State laws support adequate housing for

farmers and workers, this research suggests that Hawaii currently lack the support mechanism to implement those objectives. In this debate, it is important to try to move the discussions forward by finding solutions to the problem of farm worker housing. While local food production might continue to increase in Hawaii because of beneficial local marketing opportunities with DTC sales, advocates for agriculture must listen to small-scale farmers and what they consider is the most important issue in local agriculture. This is something people understood during the plantation era and that led Hawaii's agriculture to be the world leading producers of sugar and pineapple.

A small-scale farmer in diversified agriculture could employ between ten and twenty workers on a small productive farm of five acres; however, the farmer is unlikely to invest in a large farm dorm or farm labor housing for several reasons. One reason is that small-scale farmers do not have much time for anything other than producing food, they are needed on the farm. Hawaii's agricultural cluster (i.e. farm dorms) in Honolulu City and County zoning is permitted on large tracts of land i.e., a minimum of 15 continuous acres (AG-1 zoned land) and minimum of 6 continuous acres (AG-2 zoned land). Small-scale farmers with less acreage than minimum requirements for clusters are allowed additional options of Ohana dwelling units or an ADU if the land has a country designation. Availability of more funding would allow some small-scale farmers to better access housing solutions for their labor. An effective solution to this problem would be to amend rules to allow farmers on plots smaller than five acres on Oahu to build farm labor houses because those rules are already in place. Instead, an effective solution must address funding opportunities for low-income farmers. As a result, a proposed solution should focus more on making funds available to farmers who want to increase attractiveness for farm labor through housing options and less on change in zoning regulations, or on making funds directly available to farm workers.

This is perhaps the main reason why HB2451 also known as the Tiny Houses Bill was rejected for Hawaii County in 2019. Here are some objections to HB2451-Tiny Houses:

- L.R. Asuncion, Director Planning (State of Hawaii)- 1) Currently "farm dwellings are allowed in State Agricultural Districts and this kind of initiative should be pursued at the county-level; 2) As written, the amendment to HRS § 205-4.5 (a)(4) will be problematic for county implementation and enforcement, and frustrate county efforts to regulate and control non-agricultural residential uses in the State Agricultural District;

- M, Yee, Director for Planning (County of Hawaii)- 1) HB 2451 is redundant since both State and County land use laws already provide opportunities for employee housing and farm dwellings on legitimate farms within our Agricultural Districts; 2) There is a misconception that obtaining a farm dwelling unit is complicated. An owner only needs to sign a Farm Dwelling Notice for the first farm dwelling unit on a parcel.

The above objections of the HB2451 Tiny Houses bill suggested it was the bill that was a redundant measure. Instead an effective solution would have to affect the ability of low-income farmers to attract and attain labor and show how it connects to increased food production. Below, three solutions are posed to this problem and discussed further. Moreover, in the 2018 Legislative Session, Senate Bill 2424 and House Bill 2473 (companion bills) proposed a funding mechanism for tiny houses on Hawaiian Home Lands. The bills were not passed with the main objection from the Department of Hawaiian Homelands being that a funding mechanism for housing already exists and that the measure would be redundant (State of Hawaii, 2018).

During the 2019 Hawaii Legislative Session, companion bills SB755 and HB1101 related to a farm worker housing task force were introduced. SB755 was not asking for a change in zoning or law but for a task force to study the issue further. When combined these two bills received over two-hundred pages of supportive comments (see www.capitol.hawaii.gov for SB755 and HB1101 public testimonies). The companion bills died and were instead reintroduced as House Concurrent Resolution 76 and House Resolution 74 requesting the director of the office of planning to establish within the office of planning an agricultural housing task force.

Attracting labor to agricultural operations is a priority for farmers from all States, but Hawaii has a unique ability to retain people in agriculture through offering housing especially as because of Hawaii's housing crisis. This research suggests proposes a solution for attracting agricultural workers to further increase the local food supply and expand operations for Hawaii's existing small-scale farmers.

Making the case for a farm employee training program and office. Needless to say, availability of farm labor is the number one issue that prevents farmers and the local food industry from scaling-up food production and to reach a scale of being economically viable. Related to the issue of attracting reliable farm workers is to provide houses for people to live on farms discussed above. Because of the

way alternative farmers operate, many farmers are also the perfect ally for assisting in the work of growing new farmers and new farm workers by educating customers and employees about healthy food, sustainable agriculture and farm livelihoods. Community leaders and farmers Kukui and Gary Maunakea- Forth of MAO Organic Farms in Waianae, the largest organic farm operation in Hawaii, have pioneered this work in our communities many years before the author touched land in Hawaii. Kukui would often suggest that community leaders think about solutions for new farmers and labor retention through a systematic lens explained by the Hawaiian word "auwai" which means a watercourse or a channel especially for irrigation. To grow more farmers and attract a skilled workforce for local agriculture, a successful channel should expose young people to grow and eat local food in K-12 education. Some of that is being addressed by the farm-to-school movement. The MAO youth program has successfully extended the channel and created educational programs for interns and apprentices to receive college credits and stipends for youth that have graduated from high school. Their programs allow for Indigenous Hawaiian youth to work on an organic farm while receive a college education, which has led to many new college graduates in a community where numbers were historically low.

Many alternative farmers participating in this research project created their own educational programs to have volunteers, interns, and apprentices exposed to farm operations and living on farms for a set period of time for hands-on training and education. Farmers also educate their customers through interactions in the farmers' markets and other direct marketing venues. Many of these people start as customers, then become volunteers, interns, and apprentices. Some move on to be new farmers and farm employees; however, farmers feel that they are bearing a disproportional expense. Hawaii Department of Labor and Industrial Relations (DLIR) should recognize and share the cost of educating the future workforce that currently works on small-scale farms- especially as they have similar concerns (State of Hawaii, 2013). To address a more comprehensive solution, DLIR ought to explore the idea of creating a Farm Employee Training Program and Office to fund and actively work with small-scale farmers as educational and training partners and potential employers of the trainees. Advocates should work to ensure that funds end up with the farmers and not stop at organizations that specialize in educational and training programs for farmers.

In this conversation, availability of farm labor housing or dwellings allows farmers to attract more reliable workers and not to rely on temporary volunteers. Farmers must be funded and permitted to live

on the farm because farming is very hands on and requires an intense time commitment. Farmers can attract and help train better farm workers, and it helps with on-farm security and protection from stealing. Implementation of funding additional dwelling units on farms will ultimately allow farmers to expand and stabilize their operations as it would attract more skilled and serious workers and thus increase the local food supply. The discussion earlier raised the idea of a government cost-sharing program for interns and apprentices on farms but many of the farmers also said that solutions should make a bigger and more long-term impacts. As a result, this section presents a vision of a farm employee-training program that would be housed in the Department of Labor and Industrial Relations to provide a comprehensive solution addressing multiple aspects of scaling-up food production and attracting new employees to agriculture. The vision is formulated by the author but is a compilation of the feedback from farmers and organizations who are actively working to move this issue forward (see figure 7.2- A Vision for Next Generation Farm Employee Training Program). The goal of the vision is to provide a long-term solution to improve the availability and affordability of skilled agricultural workers in Hawaii through the following five activities.

1. Labor Housing Vouchers- similar to the idea of Section A housing vouchers, a voucher payment system directly to farm labor that subsides rent for the worker and ultimately adds to the benefits and attractiveness of working on farms.
2. Vocational Training Expenses-creating a formal farm apprenticeship model under DLIR that would cost-share apprentice stipends and health insurance for those who are educated on farms.
3. University tuition waiver- similar to the MAO farms program to improve attractiveness for people to work on farms by adding an extra benefit of a tuition waiver for a bachelor degree program.
4. Agroforestry Certificate- work with a University of Hawaii partners to develop credits and a certificate program to extend credits for interns and apprentices who are being educated on farms.
5. Research- agricultural workforce research in Hawaii that explores the connection among several factors including availability of skilled workers, availability of worker dwellings, increased local food production and increased food security.

Figure 7.2 A Vision for Next Generation Farm Employee Training Program

Priority 3) Strengthening Community Food Hubs. Food hub insights and policy considerations were discussed in Chapter 6. In addition, some of the policy recommendations in table 7.1 pertain to purchasing from food hubs and extending funding and resources for part-time farmers to participate in scaling-up local food supply. In this section, some of the earlier findings are reiterated, and the section focuses more closely on policy considerations for people who operate food hubs. Food hubs have the ability to empower people in rural communities to participate in supplying locally produced foods for local consumption. That is in part because they appeal to customers who want to support small-scale farmers but cannot embark on individual relationships with each farmer. But also, in Hawaii's rural communities there is a vast amount of food growing in people's backward that is currently wasting because those folks do not have access to markets. In Waianae, Oahu, before the Kahumana Farm Hub (KFH) opened, some people would occasionally take their yields to the Chinatown market in Honolulu to make a little income; however, few people would do that. Most people would harvest what they could consume, gift some to their neighbors, and the rest would waste.

Mangoes would waste in people's backyard that are the world's best mangoes- worth up to $7 dollars per pound retail. Part of the reason why people do not go out of their way to sell their mangoes is because they like to stay at home close to their family and help raise children and grandchildren. KFH became a rural enterprise that was able to empower people to become suppliers while not sacrificing themselves and their families because the hub is in geographically only a few minutes away from the growers. About 75% of the food hub growers are Indigenous Hawaiian. Almost all the growers of the farm hub are considered socially disadvantaged, low-income farmers, beginner or new farmers and many would not even call themselves farmers. Here is an example of the authors interactions that illustrates the last point from the author participatory observation note:

> I have myself witnessed the joy and I'm empowering feeling of people being able to contribute to food supply through the Farm Hub that I work in with the many Waianae farmers that I service. I claim that if we do not empower these folks in our local food system we are wasting our coupled human, cultural, natural resources that make a significant contribution to food supply and local consumption. But we also fail in understanding who our food providers are and exclude them, we strip Hawaii's people of the human integrity to contribute to society. Many farmers do not look at themselves as farmers. Last time I asked Miss Leilani when she had harvested her mango, lemons and calamansi limes, I asked: "do you think of yourself as a farmer?" She said: "oh no, this is just what we do…" and she said that she has been doing this since she was a child when her family was raising cattle in Hilo. She harvests and share the fruit with me and I, in turn, share it with our many communities that purchase locally grown food in Hawaii. Miss Leilani takes such good care of the food she grows. She knows how to do that and that is just something that is part of who she is and how she lives her life.
>
> Source: extract from authors participant observation

Miss Leilani does not consider herself a farmer. USDA defines a farmer is a person that trades, produces or processing or barter $1,000 per year. Miss Leilani and most other farm hub growers provide much more than $1,000 annually so they are technically considered farmers. A lot of house owners in Waianae produce and trade more than that amount per year. Their contribution to local food supply is very clear and significant and it is increasingly measured by community-oriented food hubs. The contributions to supply of regular residents like Miss Leilani has been a revelation for the author since the start of KFH. Ninety percent of KFH members are backyard farmers on a part-time basis. They do not view themselves as farmers. Nevertheless, as a collective their contribution to the food system is substantial. The proof of that in Hawaii is the KFH project but there are other examples from other places.

"Ohana" means family in the Hawaiian language. Ohana was often the reason growers did not want to go too far out of their way to sell products at retail prices. However, food hub growers would often

share the work and bounty. They harvest and clean backyards together, showed up together in Ohana groups, and shared the income they made from selling the fruits or vegetables. This way of working with the family and their knowledge about the land stands out as a clear cultural strength of Indigenous Peoples being food suppliers. Indigenous Peoples are not starting farming from scratch. Instead they bring a lot of ancient, local, and Indigenous knowledge and expertise to the table that the author, as the manager of the program, learned firsthand. In areas such as Waianae, this type of Ohana related economy, a living economy, is also adopted by non-Hawaiian people that move to this region. The first year of operating in 2017, the food hub supplied 75k pounds of local food from its forty growers who earned $90k- approximately $2,250 per member. The second year, KFH supported about seventy growers who earned roughly the same amount each. Each growers always came with their Ohana and shared the work and bounty. Future research could attempt to better understand the Hawaiian system of Ohana and how it strengthens our local food supply and adds to Hawaii's food security.

KFH had stable supplies of seasonal food products at affordable prices. In turn, many of the customers in farmers' markets, stores, and restaurants came to appreciate doing business with KFH. KFH is essentially a middle man in the supply chain and must take a portion of the revenue to pay for its own operation. KFH was a start-up of a small-scale organic farm that wanted to positively impact the community that it was living in. Insofar as food hubs help mobilize supply for small-scale and low-income farmers, retired farmers, and other rural residents that grow food, food hubs should be financially supported especially during the first 10 years, so they can become a permanent feature in the industry. If a food hub is just another middle man that hinders farmers from attaining the retail value of their products, they do not fit into the logic of local food systems. In reality, both can co-exist, because there is currently such a high demand for locally produced foods that everybody can enjoy a piece of the pie. Yet the question has been raised to the author personally whether food hubs undermine the commercial farmer's ability to enhance their income because they allow residents to sell food at price that could undermine full-time farmers.

The fact is that most of the people that use KFH as a community resource are Indigenous Hawaiian people who grow food to share with others as a way of life such as the example of Miss Leilani. The detriment to "conventional" farmers of including non-conventional growers in the local food supply system is insignificant. It would not be a stretch to argue that traditional Hawaiian agriculture is the

most “conventional” type of farming in Hawaii. What is considered conventional today are practices imported from the U.S. mainland to Hawaii in the last 100 years or so. As a result, regular people who grow and share food can and should become part of Hawaii’s local food system especially in these days when Hawaii is facing a food security crisis. Stewardship and expertise offered by Indigenous Hawaiian agriculture to perpetuate historically rooted and traditional approaches to farming should be considered “super” sustainable as Hawaiian people sustained a population of one million people before food imports. People like Miss Leilani should be empowered to continue doing and living the way she wants to live as a proud Hawaiian person who contribute to Hawaii’s local food supply. To promote that, community oriented food hubs can be a solution both for growers and customers.

***Community Oriented Food Hubs and Policy Considerations*.** The KFH manager facilitated a focus group with the major food hubs represented that published an Open Letter to the State of Hawaii published on the Farmers Union’s website in June 2019 (see Appendices 5, HFUU Food Hubs Open Letter to State). In the letter, the hubs stated that “*as Hawaii State institutions strive to increase procurement of local food, it is imperative that procedures, programs, and infrastructure be developed to enable all of Hawaii’s farmers to participate in this tremendous opportunity.*”

Multiple hubs asked that the State address policies such as: a) Establishment of a multi-stakeholder task force under the Lieutenant Governor's office to 1) Increase regional sourcing of local food through food hubs, cooperatives and family farmers; 2) Establish a mechanisms to promote binding contracts with producers and ensure timely payments for local food acquired by the State; 3) Purchase directly from family farmers and food hubs as these dollars multiply in the community and lead to more economic, social, and environmental benefits; 4) Provide a clear and flexible bureaucratic structure and interface exclusively for local food operators. In addition, the hubs asked for: b) funding means to support critical infrastructure to grow food hubs on every island, including 1) Construction of food safety qualified facilities to include aggregation, washing, minimal processing, packaging, cold storage, and other value-added facilities; 2) Provision of technical assistance to help develop internal capacity to supply state institutions and other markets; and 3) Access to adequate inter-island transportation and distribution facilities that maintain the integrity of the cold-chain between the farm and the customer. The food hub focus created the Open Letter to the State in the summer of 2019. Several Hawaii legislators have indicated support and asked their staff members to draft a bill for the 2020 Legislative Session based on

the letter of the HFUU food hub group. For the purpose of this research, the letter serves as a policy recommendation; while a potential bill sheds some hope for food hubs to secure their own funding, the legislative process is dynamic and full of political nuances. Weather a bill is signed into law or not, and if it covers what was in the letter published by the focus group of this research project, cannot be known at this point and must be reported by future research or correspondence.

More evidence from the HFUU survey shows that farmers who do not utilize food hubs currently would like to access them. In the HFUU 2018 survey, farmers said that food hubs were the second most important priority after Living on Farms (comments from farmers can be seen in Appendices 5, HFUU 2018 Membership Priorities). Table 7.2 summarized the food hub policy priorities discussed here and in chapter 6.

Policy Priority 3: Strengthening Food Hubs		
Priority Area	**Summary**	**Recommendation**
1. Start-up Capital	A community food hub should be established wherever there is a need, but a hub can only function as long as it meets its internal needs for capital. Breaking eve could take 3-5 years and during that time it needs to have access to start-up capital.	HDoA to provide grants for new food hub projects to have start-up capital.
2. Shortage of farm workers	Discussed in the last policy priority of availability of farm employees. Food hub growers could produce more food on their lands if there was more skilled workers available.	DLIR- See Figure 7.2 A Vision for Next Generation Farm Employee Training Program
3. Mentoring program- Preserve the knowledge-	Many food hub growers have unique local, Indigenous, and ecological knowledge that could be lost if mentoring programs do not fill the gap.	HDoA/CTAHR/HFUU to expand mentoring programs such as FAM (farm apprenticeship mentoring) program to facilitate intergenerational learning in agriculture.
4. Access to agricultural water	Many food hub growers are part time backyard growers and do not operate conventional large farms. As a result,	Board of water to amend its rules to permit use of agricultural rate water for part-time growers with

	they do not get access to agricultural water.	backyard farms who contribute to the local food supply
5. Food Hub Task Force- Food Hubs Open Letter Request 1	The task force would develop a framework to address: a. Increased regional sourcing of local food through food hubs, cooperatives and family farmers. b. Mechanisms to promote binding contracts with producers and ensure timely payments for local food acquired by the State. c. Purchases directly from family farmers and food hubs as these dollars multiply in the community and lead to more economic, social, and environmental benefits. d. A clear and flexible bureaucratic structure and interface for exclusively-local food operators.	Establishment of a multi-stakeholder task force under the Lieutenant Governor's office to advance institutional food procurement with key partners including HI DOE's Aina Pono, Hawaii Department of Agriculture, Hawaii Department of Health, other state procurement offices, distributors, and groups that advocate for family farmers.
6. Food Hub Procurement- Food Hub Open Letter Request 2	Funding means to support critical infrastructure to grow food hubs on every island.	HDoA to create a funding program to address: a. Construction of food safety qualified facilities to include aggregation, washing, minimal processing, packaging, cold storage, and other value-added facilities. b. Provision of technical assistance to help develop internal capacity to supply state institutions and other markets.

Table 7.2 Policy Priority 3: Strengthening Food Hubs

Chapter 8
The Planner's Role in Community Food Security

Overview

Chapter 8 presents the summary and conclusion of this dissertation. The first section synthesizes key findings from Chapters 4, 5, 6 and 7 as they pertain to alternative farmers, food hubs, the multiple roles of the researcher, and policy considerations and priorities. The next section discusses planning theory, implications for planners and why they should expand their scope and skillset to promote alternative farmers scaling-up to strengthen community food security.

Key Findings: Alternative Farmers' General Needs And Priorities

This dissertation aimed at producing pragmatic and conceptual linkages between planners and alternative farmers but also more specifically to highlight tangible policy considerations and recommendations. Objectives of this research include exploring policy solutions for moving the issue of food security and the role of alternative farmers forward in Hawaii. Despite planners' emphasis on community food systems over the last two decades, there has been a lack of research, practice and education addressing the local food supply and food producers. Many important insights and potential future effects can be gained by working closer with farmers and to "walk in their shoes" so to speak.

One of the first things a farmer will say about food security is that there can be no food without farms, so the preservation of farmers is a precondition to strengthening community food security. This dissertation engaged over one hundred alternative farmers, their workers, and some allies through an ethnographic approach of learning from the practitioners. The project utilized a range of interviews, surveys, and participant observations aimed to better understanding the lived reality of farmers. More than any singular data collection method, the approach was to develop close relationships with the research population and utilize methods that allow for fluidity, accuracy, validation of results and most importantly fairness. This research used an inductive style of reasoning sometimes referred to as bottom-up reasoning. Unlike other research approaches, a bottom-up method encourages the farmers to set their own agenda and the author's role was to facilitate that. Instead of starting with a premise, the research journey started with an open and flexible conversation with direct to consumer (DTC)

farmers to understand their lived realities, the things they deem important, and their most pressing needs.

The inductive approach combined with a desire to arrive at policy considerations and recommendations brought forth a multitude of issues and priorities from farmers, not just one or two. Throughout Chapters 5, 6, and 7 multiple sources of data were triangulated to improve overall understanding of the findings. Chapter 5's findings provide insights as to the value-driven activities of alternative farmers in Hawaii. Alternative farmers' motivations and values are key consideration to understanding the environmental effects from their practices and the growing emphasis on environmentally and socially friendly agriculture. While some view alternative agriculture as a specific method of food production that eliminates harmful chemicals from being used, others call for a more comprehensive responses to the ills of society such as addressing individualism, opposing repression and building free zones from capitalism.

Chapter 5 also produced the first attempt at understanding alternative farmers' operations from an organizational lifecycle approach. Government reports and academic literature have identified the need to learn more about how to incentivize increased local food production (Low et al., 2015; Martinez et al., 2010). This study decided to take that call one step further by identifying what and how policy supports can effectively promote farm business survival at various stages of birth, growth, maturity, old age, and death. Multiple life cycle stages and corresponding policy supports are explained and summarized in the conclusion of Chapter 5 and in table 5.2. Future research could more deliberately utilize the lifecycle format with a deductive rather than inductive approach, to gain a more detailed understanding of the various stages of farm development and the role of policy and planners. Continuing the lifecycle discussion, some DTC farmers who had experienced a decline in income from farmers' markets specialized in bringing the market home through simultaneous activities of farm tours, sale of on-farm products, farm-to-table cafe's and events, development of value added products, bed and breakfast activities and offering community supported agriculture (CSA). In addition, the Chapter contains important considerations for non-profits farmers.

In Hawaii, many prominent food producers are part of a non-profit organization with a larger social or cultural mission. For example, MAO Organic Farms is the largest organic farm in Hawaii with a central mission is to educate and cultivate young leaders. Nearby on the same street, Kahumana Organic Farms operates a non-profit that provides housing for the homeless while producing organic food directly for

local customers and restaurants. As community-based and non-profit organizations increasingly get involved in agriculture, the effect of them operating an economically viable farm reaches far beyond boosting access to local food and deep into the other related issues of community empowerment. Hawaii's is facing a food and housing security crisis simultaneously. Increasingly, it is important to propose solutions that reflect both types of crisis and their disproportional effects in rural communities in Hawaii.

Chapter 6 presented the findings in regards to community oriented food hubs. Perhaps most significantly, community oriented food hubs that are in near proximity to rural growers can play a significant role in improving access to local food while allowing growers to continue their way of life. That was important because for many Indigenous Hawaiian people, growing food is part of their way of life and not necessarily viewed as a profession or specialization. Based on the findings in Chapter 5 and 6, Chapter 7 presents three policy priority areas of which one is focused on strengthening food hubs in Hawaii. Over twenty specific policy recommendations are summarized in tables 7.1 and 7.2 with the latter one focused on food hubs.

A key finding of this research has to do with alternative, subsistence, and part-time farmers contribution in scaling-up local food supply and ultimately food security, which is an area that is largely overlooked by research and policy (Bittenbender, 1993; Lincoln and Ardoin, 2015). While small-scale, sustainable and alternative farmers play a vital role in alleviating hunger and improving food security all around the world (IAASTD, 2008), Hawaii's public policy developments keep supporting other communities than their own. People in the legislature would rather explore models of importing solutions to end the food security crisis (Yerton, 2019). Obviously, there is predicament when policy makers want to solve Hawaii dependence on imported foods by importing farmers from other countries, which completely ignores the existing human resources and potential effects of finding the solutions within in Hawaii's communities. The focus of all the policy considerations and recommendation in this study is to find the solutions within the communities partly by documenting how they have invested and built capacity for increased community food security in Hawaii.

In Chapter 7, seven policy considerations were highlighted through seven trends that, when combined, give rise to incredible opportunities for alternative farmers. The seven social trends provide a general explanation to consumer trends of "forming closer relationships" between the general public and alternative farmers that bring new excitement and multiple possible trajectories. In addition, many of

the farmers' most pressing needs were presented in Chapter 7. These include the priority of local food and self-sufficiency programs (see table 7.1) along with thirteen specific policy initiatives that could assist alternative farmers to scale-up local food production.

Finally, the third policy priority discussed in Chapter 7 that needs a more homegrown solution is the need for skilled employees on alternative farms especially those who are expanding production. In the labor debate too, people often suggest to import low-skilled seasonal workers from other countries to fill labor shortages. Alternative farming with a directo-to-consumer, focus on face-to-face marketing, often requires a different kind of employee: one that can educate customers and engage in direct marketing activities, and juggle multiple tasks associated with operating a small-scale farm and small business. While there is no promise that the U.S. will find a strategy or legislative initiative on a National level to address farmers' needs for labor; however, the author participated in pushing for it as a priority of the National Farmers Union (NFU) Special Orders of Interest for 2019. To quote one sentence of NFU 2019 Special Order of Interest on Family Farming and Farm Labor: "*Additionally, Congress should take action to attract U.S. citizens to jobs as agricultural workers and acknowledge the importance of educating interns and apprentices on farms as a pathway to increased availability of skilled agricultural labor*." The full content of the farm labor policy can be found in the Appendices 5. Federal level changes could take time and be a more involved process; however, Chapter 7 presents a vision (see figure 7.2) for the State of Hawaii and the Department of Labor and Industrial Relations (DLIR) to improve availability of labor for alternative farmers who are expanding and scaling up in Hawaii. Additional research can explore how farmers are addressing their labor needs and how innovation in policy or subsidies could support their activities.

A short follow-up survey was generated with six farmers who were deliberately selected because they are currently scaling-up production and expanding their farms. Within the next 5 years, each farmers said they will need to hire, on average, eleven more people and sixty-seven more people combined (see Appendices 5- Agricultural Labor survey). The survey is currently open and will be part of upcoming presentations and publications to strengthen efforts for agricultural workforce development in Hawaii. Needless to say, when the State lacks adequate employee training programs farmers will not be able to scale-up local food production. The priority of workforce development for agriculture in Hawaii also views housing as a potential strategy to attract and retain skilled labor to scale-up local food production. While the debate about agricultural housing is often dominated by views of gentleman farmers and the

need for additional an taskforce to study the matter, the discussion in Chapter 7 suggests that the answers are ready to be tried not further studied by a new task force. As such, stronger action is recommended to provide funding and additional recourses for farm worker housing subsidies and actual housing development for farmers.

Implication for Planning

The role of the planning researcher in promoting community action. Unlike most theories in social and human sciences, planning theory is neither explanatory nor predictive, it is a theory of good practice with the main objective of improving planning practice (Friedmann, 1995). Planning research should be able to provide societal guidance, which can be done with advocacy planning, community participatory and bottom-up planning. For example, Forester (1999) suggests that planners should get involved on a micro-interaction scale partly because policy analysis cannot be separated from the audience that it is directly aimed at. Planning is thus far from an objective or scientific inquiry. Social learning moves away from rational planning and focuses on ongoing actions and interactive social processes and stresses action. Mobilizing scarce resources, should always be primary focus of planning research (Friedmann, 1995).

Early in the process of conducting this research, the author felt that there was an absence of narratives that fairly reflected the lives and actions of alternative farmers in the research and education of sustainable and community food systems. As a result, planners have been promoting an incomplete concept of community food systems based on the needs of the hungry. Community food security suggest that, for community residents to obtain a safe, culturally acceptable, nutritionally adequate diet, there needs to be a sustainable food system that maximizes community self-reliance (Hamm and Bellows 2003). As a result, food producers and sustainable agriculture constitute a crucial aspect of community food security that has been largely overlooked in planning research, education and practice.

To understand more about the lived realities of the producers on community food systems, the author visited 11 alternative farmers on Oahu and Hawaii Island with Dr. Mary Mostafanezhad. The author's personal involvement is described in Chapter 4's narrative and summarized in table 4.1 as well as the timeline (figure1.6) in a Chapter 1. All of the farmers reported evidence of the importance of volunteers on the farm as a coping strategy to becoming economically viable. Instead of going back to the

classroom, the author joined Kahumana Organic Farms to experience the life of a farm volunteer worker on an organic farms for himself. He then joined Naked Cow Dairy where he learned about dairy production, cheese making, and the food safety aspect of marketing food products in grocery stores such as Foodland, Whole Foods and Safeway. Working at the Naked Cow Dairy also helped the author to identify the many small business skills a farmer must have to be successful including record keeping, financial planning, business planning, and commercial level production.

At this time, the author also utilized his personal culinary interests and was able to create several new cheese products that were unique to Hawaii (for example, see image 6 in Chapter 4). He also taught other dairy farmers in Hawaii how to make cheese and conducted several cheese classes with chefs and local customers. Life on the dairy was hard but the author was consoled, more than others, because in part the objective of the research was to document challenging experiences. In addition, while documenting the process of scaling-up production, the author himself simultaneously made significant contributions to scaling-up production during the two years at the dairy. In the week of comprehensive doctoral exams, the author was the only person holding down the dairy and feeding animals, milking cows, and making cheese while simultaneously meeting the requirements of the PhD degree.

During the research journey, the hope was to produce a piece of work that promotes the active engagement of the researcher in the field and in fact goes beyond that to become a community resident, see the world from the community's perspective, and use research as a tool to move the community forward. That objective became crystal clear when the author met with Dr. Meyer and Dr. Kahakalau who were both Indigenous educators inspired by the work of Brazilian activists Paulo Freire. At the University of Hawaii at West Oahu (UHWO), a new research project called Imi Naauao introduced the author to the concept of "Auma Kuleana" which means to carry your responsibility in the Hawaiian language. In her Imi Naauao publication, Dr. Meyer explains her understanding of Auma Kulena (Mello et al., 2019):

> For ʻImi Naʻauao, this esoteric meaning and function became one of two operating principles that helped define ʻimi naʻauao, this search for wisdom, within a mainstream university setting we would alter through our friendships... an ancient sequence that holds iʻini - animating principle - for how one gathers around a shared agreement. It is a process that encourages individual excellence through *difference*. The challenge is to be in a group that knows how they differ and what their unique strengths are. It then became our job to encourage those difference into their fullness and potential...Kū Kahalalau called this process: "Lūʻau Methodology" and made us think with the metaphor of uncle tending the imu. No-one comes up to tell him how to heat the stones or wet the burlap bags. He might not

even use burlap bags! The thought made us all laugh out loud! No-one tells aunty who makes the squid lūʻau how to tenderize the heʻe. Everyone has a skill, a function, an excellence born through experience, interest, skill, kuleana. How we used this understanding within research in mainstream institutions became our collective undertaking.

Pictured here from left to right: Manulani Aluli Meyer, Kū Kahakalau, Kukui Maunakea-Forth and Gina Carroll

Image 15- UHWO Imi Naauao Kupuna or Elders

Image 16- UHWO Imi Naauao Workshop

A trend in social science research argues that it is important for the researcher to expose their personal involvement and values as part of conducting research (England, 1994). Maxwell (2013) argues that research validity is important and thus exposing the researcher's personal involvements provides the reader with an idea of any personal bias. More important than validity is the goal of increasing understanding according to Maxwell (2013). During the process of this dissertation, not only did the author expose his personal involvement, but he made reality of a long dream of farming by becoming part of the family of farmers. He made efforts to walk in the farmers' shoes and it resulted in magnificent learning of new skills, creation of new relationships, and established a dialectic relationship that informed this dissertation. Two decades ago, Pothukuchi and Kaufmann (2000) argued that planners should care about community food systems because, if they do not, then there is a risk that nobody will. Consequently, as planners get more involved, Raja et al. (2018) reported that local government engagement in community food systems is often led by those who play the dual role of scholars and practitioners. On that note, this research argues that if planners do not care about alternative farmers, than nobody will. As a result, the author immersed himself into the community to unravel and demystify their lived realities and way of life of small-scale farmers so that planners in the future can more deliberately address them when promoting community food security.

The author's dive-in to the community had everything to do with the mentorship of Dr. Meyer and Dr. Kahakalau's inspiration of the UHWO Imi Naauao project and his academic adviser Dr. Minerbi. Beyond getting involved with on-farm projects for scaling-up, the author was also appointed by Hawaii Farmers Union to represent them in State and Federal level related policy. Far more than wearing two hats, table 4.1 shows the multiple roles of the researcher beyond this dissertation project. Awareness of the issues that plague farmers livelihoods in Hawaii and in the U.S. inspired the author to get involved on many levels of community food systems. The strength of Indigenous Peoples research methods such as Maawe Pono is that it views community scholarship and directs the researcher to become and understand the perspective of community residents. Using research as a tool to move the community forward on issues they deem important is part of the Maawe Pono perspective which also match the personal knowledge, skills, and dreams of the author. Had the author stayed on campus over the last decade instead of living with farmers, the findings of this dissertation would not be nearly as exciting.

Planning theory and local food. The Planners Code of Ethics and Professional Conduct presents ethical and moral reasons for planning actions (AICP, 2016). The principles of promoting public interest to advance civil service has been in line with the authors' motivations to work with small-scale, locally oriented farmers and the communities they feed. Furthermore, overarching planning ideas by Fainstein (2010), Friedmann (1987), Forester (1988) and other hyper realistic, well intended planners inspired the author to muddle though and continue to work for justice, sustainability, and empowerment in communities in the face of major challenges and complexities. The Code of Conduct clarifies and validates that planners work first and foremost for the public and to improve communities and lives (AICP, 2016). Increasing public interest and concerns for food security, climate change and health has effectively brought planners "back" to the food table with a focus to improve and enhance local and community food systems (Campbell, 2004).

Increased public interest in food and agriculture is almost entirely focused on alternative, sustainable, and regenerative forms of agriculture including small-scale, local, organic, direct-to-consumer, family led, and community-based farm operations. This project has demonstrated how increased public awareness and interest in food has resulted in seven trends (Chapter 7) that, when combined, offer alternative farmers a way to preserve themselves in the alternative food industry. Popularity of new

forms of marketing in Hawaii including direct sale to consumer (DTC) in farmers' markets and through CSA, more farm tours, and farm-to-table dinners, result in increased income opportunities for farmers. Increased interest in sustainable agriculture has also led to more young people curious about living and working on farms to learn the skills of food production. This dissertation offers new insights into the realities small-scale farmers face and how planners can work with them in order to support goals of increased food security and sustainable agriculture. An enhanced understanding of the lived reality of small-scale farmers in Hawaii that grow food for local consumption including their social values, their benefits to society, the challenges they face of marketing and availability of labor, and understanding where and what interventions are needed to reduce barriers faced by farmers will ultimately assist planners to promote better food and agricultural system on local, state, and national levels.

Planners describe the gap between planning theory and practice in a way that is not always emphasized in other academic disciplines. Several works have helped level the author's expectations to navigate some of the confusions and misconceptions of theory and practice in planning literature (e.g. Brooks, 2002; Forester, 1988; Friedman, 2008; Beard and Basolo, 2009). The emphasis on practice and process brings planners and their research closer to the ground to explore the lived realities of communities and, in turn, understand how planners can solve problems and find solutions to those problems through governance and policy work. Planning promotes a tight connection between knowledge and action that is truly community oriented, community led and based on the lived realities of the people involved rather than an abstraction (Friedmann, 2008). Meanwhile, planning literature also provides the methodological tools such as participatory action research to conduct such research.

In the spirit of interdisciplinary studies, this research urges planners to go outside of their scope to learn from other fields and people in agriculture and rural development. Pothukuchi and Kaufmann (2000) first called for food planners to learn new areas and skills. Pothukuchi and Kaufmann (2000) suggested planners had blindly pursued food planning and been absent partly because planners do not feel at home in rural areas and with agricultural issues. Vitiello and Brinkley (2013) suggest that planners were merely re-learning skills they used to have in food systems planning over a century ago.

Planning practitioners have been focused on serving the urban poor. Some of the reasons highlighted by Pothukuchi and Kaufmann (1999, 2000) for why planners have not been involved in food supply

planning still remain. Advocacy planning for underserved populations constitutes a central planning theme (Davidoff, 1965) and in food systems planning practitioners have advocated on behalf of the underserved populations but not the food producers. Chapter 1 opened with a quote by Wendel Berry suggesting that eating is an agricultural act. He spoke those words as he lectured to urban populations who were concerned about farmers wellbeing. These views resonate with the concept of the civic agriculture, a movement that highlights the connections between agriculture, rural life and the family unit, which play a unique role in socialization (Hyde-Bailey, 1980; Carlson, 2004; Lyson, 2004) and the importance of preserving family farms (Zurayk 2010; Francis, 1994).

More recently, Meter (2011) calls for the movement of regular citizens to improve their state of democracy though building the productive food systems skills of city dwellers which suggests that people need to directly contribute to their own society for human wellbeing. A large and important body of literature covers rural revitalization through local food systems including Hyde Bailey (1980) “The Holy Earth”, Lyson (2004) “Civic Agriculture”, Carlson (2004) “The New Agrarian Mind”, Berry (1996) “Conserving Communities” and Francis (1995) “Family Agriculture: Tradition and Transformation”. The literature is important for sustainable food systems research because it represents the trend toward local, sustainable, and alternative food systems expressed from a more rural point of view. Articles like those mentioned give planners an opportunity to improve interdisciplinary understanding of food systems and family farmers in case they do not want to try the life of a farmer themselves. The movement represents an agrarianism that stood in the tradition of Thomas Jefferson who had a vision of permeating all higher education, including horticulture, with a spirit of public work and integrating "expert knowledge" into a broader context of democratic community action. As a leader of the Country Life Movement, he strived to preserve the American rural civilization, which he thought was a vital and wholesome alternative to the impersonal and corrupting city life (Lyson, 2004).

As suggested in the section above in regards to the role of the community researcher, planners should not only be in the listening and learning seat. Planners existing skillsets in policy, bottom-up and participatory planning, advocacy planning, pluralism and group collaborations, and action research is a major strength when applied to planning with farmers. In addition, accuracy and honesty about the history of planning’s effects on communities such as Brinkley and Vitiello (2013) allow for accuracy in

policy intervention. Planning procedures of facilitation and collaboration allows for multiple political interests to work together in cases where interest might conflict (Forester, 1988, 1999).

This research suggests that the APA (2007) Policy Guide for Regional and Community Food Systems should not only "*support strengthening the local and regional economy by promoting local and regional food systems*" but further extend the support to include the following: "*support for strengthening the local and regional economy by promoting family farmers and sustainable agricultural movements*" through an increased understanding of the reality of farmers and local production for local consumption. This dissertation has provided a starting point for planners to understand how they can promote alternative and sustainable farmers based on the Hawaii context.

Planning for Community Food Security. Planners have reclaimed interest and involvement in local food systems planning over the last two decades (Pothuckuchi and Kaufmann, 1999). While planners worked on the fringe of farming communities with conservation programs to preserve land resources for agricultural use, planners have not been involved with local food systems planning for over a half a century in the U.S (Vitiello and Brinkley, 2014). Vitiello and Brinkley (2014, p15) suggest that "*Food system planning is among the most dynamic 'new' directions in planning, though it has yet to tackle some of its oldest problems. Urban agriculture and food projects offer community economic development institutions opportunities to build food and land sovereignty, even as the place of agriculture in cities and suburbs remains ambiguous and debated in many places.*"

Research suggests there is a tension between food security and farm security in that food localization tends to benefit farmers rather than the poor who suffer from food insecurity. Several scholars suggest that increased food production does not address structural injustices in the local food system that injustices cannot be addressed by capitalist or market logics but are rather caused by them (Guthamn, 2004, 2008; Allen, 2010; Alkon and Norgaard, 2009; Winter, 2003; DuPuis and Goodman, 2005; Born and Purcell, 2006). Their approach to food security fails to see the connections between the lack of food supply and food insecurity and instead approach the issue almost entirely from a food consumer's point of view.

As discussed in Chapter 2, planners have contributed to several areas of community food systems work including the promotion of: 1) access to healthy food by underserved people, 2) linking farmers with underserved people, 3) farm to school programs, 4) removing barriers to food production through municipal codes and zoning, and 5) assisting start-up projects to access grants. While planners have pioneered the theory and practice of community food systems, efforts have generally lacked farmer perspectives, perhaps because planners have been more at home in urban and metropolitan areas and unfamiliar with rural and farming communities (Pothukuchi and Kaufmann, 1999). From a planning perspective, tighter producer-consumer linkages of local food systems is likely to be more sustainable and emit less fossil fuel from transporting the food and less fossil-fuel in producing the food. Planners also support the idea of local farmers' opportunity for receiving a larger share of each dollar spent on food, and creating a stronger local economy through deliberate purchases on local foods by public institutions such as schools, hospitals, prisons, and others. The absence of mid-tier supply chain entities in the food system drives local food prices higher affecting the most vulnerable people in the food-system: low-income consumers. Day-Farnsworth and Morales (2011) argue that planners need to move beyond the local level and scale-up production to build more regional distribution partnerships; one way to do that would be aggregation through food hubs. Day-Farnsworth and Morales (2011, 231-232) claims that "*direct marketing is an impractical means of moving high volumes of local product into venues such as retail grocery stores and cafeterias because farm-direct sales typically move small quantities of product, while retail and institutional buyers would prefer to buy larger volumes from fewer suppliers."* Aggregation- the consolidation of products sourced from multiple growers- through food hubs supports planning goals because scaling-up production allows regionally sources of foods to be affordable for underserved populations and supply to be more stable for institutions (Day Farnsworth et. al. 2009). There is a tension between access and affordability of food for low-income consumers, on one hand, and small-scale farmers' business survival on the other hand which has resulted in two different goals competing for public resources according to Guthman et. al. (2006).

Moreover, Guthman (2008, 1174) suggests that *"projects in opposition to neoliberalizations of the food and agricultural sectors appear to have uncritically taken up ideas of localism, consumer choice, and value capture ideas which seem standard to neoliberalism."* Rural sociologist have agreed on this point arguing that changes in food sustainability, no matter what scale, are perceived as redundant insofar as they do not contribute to significant social changes and justice

(Tovey, 2002; Allen and Wilson, 2008). While Barnett et al., (2005) argue that consumption can be a key site of ethical self-formation and an entry point for thinking about political and ethical responsibility, Holt-Gimenez and Altieri (2013) suggest that localism expressed though consumerism can only reproduce the problems it is set out to abandon. This study takes the middle path between the two opposing views by suggesting that increased support for alternative farmers to scale-up production is the first step on the path for farmers to be profitable that, in turn, can change larger structures that affect social and environmental problems.

While planners have been involved with farmland protection before they engage in community food systems work, it is important to understand that protection of alternative farmers should precede the goal of protection of farmland. For example, American Farmland Trust (2002) reported that farmers often say that the best way to protect farmland is to keep farming profitable. State and County governments should create a variety of initiatives to support the profitability of agriculture. For example, programs to improve farm income and environmental stewardship can include participating farmers working with a team of consultants to evaluate current operations and to develop a plan (product diversification, direct marketing, value-added products or agri-tourism) to then provide the funding for farmers to implement their plans.

This dissertation also argues against the views that access and affordability of good food should be the central focus of work in community food systems. Planning theory encourages taking action on injustices while also addressing their structural causes and to promote citizen participation. Fainstein (2010) suggest that participation is highest in the locality but unable to affect larger power structures while participation in high-up decision-making process is low but the ability to change power structure is high. The remedy for this kind of power and participation dilemma is suggested in the concept of nonreformist reform: a strategy that would operate in existing social frameworks but set in motion a series of transformative changes in which more radical changes become possible over time (Fainstein, 2010). Forester (1989) promotes a practical liberal approach that address existing structural powers and misrepresentations to empower participation of citizens. Fainstein's (2010) idea of nonreformist reform highlights how structural change can start from within the system and over time change the structures and outcomes that we as a society deem need change.

There is a larger trap we fall into as scholars and practitioners when we conceptualize food justice and food security as a concern only for people who do not have access or cannot afford healthy foods. This perspective neglects that food security is a concept that has to incorporate a community's ability to supply food for local consumption not only give access to people who cannot afford it. In the U.S., opportunities arising in the process along the supply and value chain are largely ignored as an avenue for social justice. Yet some planners have started addressing the supply chains issues (Meter, 2011). Moreover, food justice practitioners cannot ignore farmers and rural communities' ability to meet food production goals and, as an extension, creating access to regionally and culturally appropriate work opportunities for improving livelihoods in rural areas.

Aspects of food justice that focuses on food supply and producers have been emerging faster in developing countries under the umbrella of rural development. Escobar (2001) is a strong advocate for human rights and localism in South America. He argues that social movements in agriculture have a twofold commitment: 1) to the preservation of ecological diversity and integrity, and 2) to the renewal of local economies and communities (Escobar, 2001). Escobar (2001) develops a human rights component to localization and social movements theory as the re-creation of space through localization, place-making, resistance to colonialism and neocolonialism in international relations. Other scholars argue that Central America's political history has meant that activists once involved in movements for social change are still around, many of them are in NGOs working for sustainable agriculture (Holtz-Gimenez, 2001). Holtz- Gimenez (2001) illustrates the importance of farmers 'movements for developing sustainable agriculture on the ground. He argues that perhaps the most pressing lesson is simply that agriculture in general will change not only when farmers change, but when farmers and their allies are capable of changing the institutions that hold change back (Holtz-Gimenez, 2001). To that end, he argues, formation of international and regional alliances for influencing agricultural research and development may provide a useful way to overcome the present policy impasse in sustainable agriculture (Holtz-Gimenez, 2001).

Furthermore, the findings in this study agree with Fisher's (2017) argument that to eliminate hunger, planners' and community food systems have to address the economic poverty that underlies the situation. Fisher (2017) suggests that when people who suffer from economic poverty can raise their

personal income because of economic development in their community, they can create the economic freedom that allows them to purchase adequate food for themselves and their families. This research suggests that a suitable economic development activity exists in sustainable agriculture especially as customers are spending more on local food. In Waianae, Oahu, there is an increasing interest for local food production. Not only does increased food production contribute to the islands improved food security, but it can also create jobs for people who suffer from economic poverty in areas that are classified food deserts, yet historically known to be a food basket, and housing shortages. Food hubs such as the Kahumana Farm Hub (KFH) can help create jobs in areas where people are food insecure with the added benefit that the people hired become food suppliers. Research has shown that food insecurity is higher in rural areas and farming communities when compared to urban regions. Instead of food stamps, the planners' priority for rural and farming communities should be to create economic opportunities for residents to make an income for themselves especially in the community food system.

Recent reports of community food systems have recognized a gap in the industry of understanding how to incentivize small-scale farmers and local food production in response to County, State, and National programs (Martinez et. al, 2010; Low et. al, 2015). This dissertation argues that the gap in knowledge can partly be informed by planners' actions in farming communities when planning bottom-up with farmers. As noted in Vitiello and Brinkley. (2013) and in Pothukuchi and Kaufman (1999), in the last half century, food and agricultural policy in the U.S. has moved into the hands of rural extension agents and large agrifood businesses. However, the rise of alternative forms of agriculture might not be supported by the same policy tools as large industrial export-oriented agriculture (Lyson, 2004; Carlson, 2004). This dissertation argues that planners should play a role in supporting local farmers because if they do not, alternative farmers might not be represented at all. It would require that planners to learn more about farmers and farming and rural development. Moreover, recent reports show that farmers are relying on markets in urban areas which bring them further into the jurisdiction commonly associated with urban planners (USDA, 2016b). This research should give planners an opportunity to reflect on their goals in the food system and several reasons why planners should connect with farmers— this is especially true as planners are new and revisiting the field of food and agricultural planning (e.g. Pothukuchi and Kaufman 1999, 2000).

Many prominent scholars separate the notions of farmers doing well in the marketplace with their ability to contribute to meaningful social and environmental change. Planners argue that high premiums associated with direct to consumer farmers does an injustice to the urban poor. Scholars who study farmers' social movements argue that agriculture in general will change not only when farmers change, but when farmers and their allies are capable of changing the institutions that hold change back. To that end, the results of this dissertation suggest that farmers can only develop capacity for addressing larger societal issues in the food system once they have first succeeded in the marketplace. That is in part because alternative farmers are already driven by values of sustainable agriculture yet those values cannot be actualized if farmers cannot first preserve their own operations. Increased local food consumption presents an opportunity to farmers in spite of policy supports for sustainable agriculture and planner's efforts. Yet growth of the local food economy can only be sustained with the right government support for policy and program implementation.

As mentioned in the review, over the last twenty years food planners have also developed assessment tools to strengthen food systems. Planning assessments have been developed to address the complex soil-to-soil food system, which spans production to consumption to reuse and recycling of waste. These assessments include those that focus on foodsheds, comprehensive food systems, community food security, community food asset mapping, food deserts, and land inventory (Freedgood et al., 2011). Freedgood et al (2011) suggests that as most of these tools are relatively new, there is little research that addresses the different methodologies or evaluates their use as planning tools. This dissertation argues that critical perspectives about supporting alternative farmers has been missing in planning and food security efforts. Similarly, most planning assessments are focused on the urban poor. Future research can explore how these tools could promote the efforts of alternative farmers. Each farm is different and it is important that planners develop relationships with alternative farmers to support their expansion at sustainable scales.

The best way for planners to learn about why and what support is needed is to ask the farmers directly and incorporate their voices in planning initiatives. One of the innovations of this research is to specifically explore new policy incentives for increased food production rather other policy interventions imported from the U.S. mainland. Because of Hawaii's dependence on imports and lack of agricultural self-sufficiency, the islands provide a good setting to focus research on incentives to scale-up production

because of the urgency. A large part of farmers in the movement are beginning farmers. They are in the process of building internal capacity and scaling-up their operations. This dissertation identifies their needs and priorities for increased food production. Building farmers' capacity to increase local food production should be seen as an extension of community food programs— these programs need to go beyond food safety and market promotion of local food to address the needs of farmers to increase food production.

In this dissertation, small-scale farmers in Hawaii are highlighted as pioneers leading a trend of alternative, sustainable food production and consumption systems through local food systems. This research attempts to build pragmatic connections to allow planners and farmers to collaborate better in the future and steer off planners' blinders of the farmers' voice and perspective of planning efforts. While this research does not necessarily attempt to address structural injustices of people who are food insecure, it builds an understanding of the connection between successful farmers and the ability to contribute to enhanced food justice in the local food movement in Hawaii. Generally when discussing food and agriculture in Hawaii, the rising price and competing uses of land are pivotal; however, this study views land from the point of view of existing farmers. Planners have a history of working with land preservation even during times when they have been absent from the local food planning discussion (Vitiello and Brinkley, 2013). But the logic of land preservation often assumes that once land is preserved it will be put back in agriculture. Farmer Richard Ha from Hawaii Island suggests that "*everybody talks about preserving agricultural land, but nobody talks about preserving the farmer. There seems to be this belief that if the land is there, we'll farm it"* (Ha, 2019). Richard Ha's perspective is almost identical to the American Farmland Trust who suggest that farmers often say that the best way to protect farmland is to keep farming profitable (American Farmland Trust, 2002).

Preserving the Skills of Farming. As indicated in the methods section, this dissertation explored the life's of small-scale farmers based on specific cases using an inductive logic with the intention to generate meaningful generalizations for other farmers. Laboring and teaching people the skills of farming was a dominant and reoccurring theme and thus the author reviewed Richard Sennett's writings on skills development, its decline in the U.S. followed by policy perspectives on how to improve the situation.

Sennett (2008) raises an important issue of the development of skills and entrepreneurship in contemporary society. Sennett argues the U.S. is behind and there is a general decline of the skill society. The decline is inevitable as long as we continue to promote competition and not create a situation in which the vast majority of “common” people can become skillful and not only the elites or the people with “talent.” Sennett (2008) argues that American society is culturally so focused on talent, on finding that unique person with a special talents and it leaves the vast majority people outside that system of care and resources. Sennett (2008) highlights a problem with the notion that equates the ability to do good work with being unusually gifted or talented. This, in turn, creates an notion of talent as something that is scare, which is not the case according to Sennett (2008).

Looking at the other side of skill development and what creates good entrepreneurs, Sennett (2008) argues that the capacity to do good work does not require exceptional talent but rather is available to anyone. This approach to entrepreneurism is an important consideration for planners who pledge a code of ethics and responsibility to serve the public interest. Sennett (2008) describes the situations for skills development and gives three examples. The first thing of developing skills is what Sennett calls the ten thousand hour rule. Ten thousand hours provides a "rough number" of the time it takes to master a task for anyone with such determination. Embodiment refers to going over things again, repetition, getting something right over time so that it becomes a habit in your body that you can rely on (Sennett, 2008). His policy implication for long-term training is to provide support to people over a long term to be able to work on something again and again will facilitate that skill and function in our society (Sennett, 2008). Second, learning how to do one thing really well leads to an understanding of the many different ways of doing something or the "many ways to skin a cat" and getting to the end goals in many ways is a kind of flexibility or repertoire of skills. The policy implication of this has to do away with best-practices or a single best way of doing things (Sennett, 2008). Third (Sennett, 2008) talks about relationship between problem-solving and problem-finding that enables curiosity. No skill develops without a good dose of curiosity. In turn, curiosity enables people to think about what might be rather than what is. Sennett suggests that common in the history of technology is that the tool appears before we know how to use it.

Tools are wasted because they have enormous capacity that we do not know how to use. By doing something wrong, dwelling on it and working it out leads to better development of skills. One policy

problem described in regards to this point is that our educational regimes are based on multiple choices of finding the right answer. The major problem described by Sennett (2008) is that as a society we have to make the process of developing skills less competitive. Sennett gives example of places where skills are developed and all are examples from real life, hands-on places in the community and not in the classroom. Until we address these problems, we will not have a society in which people want to develop more skills. The policy solution that Sennett (2008) identifies is investment in long-term training of skills for three to five years.

This dissertation has described the realities and challenges of small-scale and alternative farmers in Hawaii. The local food economy has presented a huge income opportunity for farmers and increased public interest for food and agriculture not only limited to consumption of food but also attracted many new young people to the farming profession. The problem with the current way of looking at labor in agriculture is that the main solution to the lack of labor in the agricultural industry focuses on importing low-skilled labor through H2A program. There is no plan for developing skilled agricultural labor from within our communities. Moreover, the H2A program is not designed for small-scale farmers, as they require extensive bureaucracy. DTC farmers in the local food system often requires intense farmer to consumer connections wherein the farmers continuously socializes and educates customers. Seasonal labor through the H2A program does not fit direct-sale farmers because of the intense focus on marketing and education.

This dissertation documents in part the skills needed to grow food in small-scale and locally oriented farms. In Hawaii, skills transfer from bona fide farmers to interns and apprentices, who in turn, may become farmers and farm workers. With Sennett's ten thousand hour rule which is about five and half years of training needed to develop skills, small-scale and family farms are institutions that could become an ally in our society to developing skilled farmers and artisan food makers. Currently, intern and apprentice programs are usually six month to one year on farms. Expenses for educating interns and apprentices are paid by the farmers or students but not currently supported by the government. Increased resources for these programs that directly benefit the farmer or the student would have multiple benefits for communities including enhancing the local food economy, investment in public health and growing future farmers. To attract more people to farming, a policy solution would be for the government to cost-share the expenses of intern and apprentices educated on locally oriented farms

and offer them other incentives such as subsidies for rent and health insurance. The benefits of such solutions would not only affect current farmers and consumers, but also the next generation of farmers and farm workers.

Role of Local and Regional Government in Community Food Systems: Right representation and investment in food systems infrastructure. Raja et al., (2018, p8) point out that "*it has been nearly two decades since Pothukuchi and Kaufman's (2000) call for local governments to engage in food system planning and policy making. It is only fitting that the way forward for local governments be about reflecting inward, reaching outward, and perhaps reimagining how our food system, as a civil commons, can best serve all community members.*" Mulligan et al. (2018) suggest that planning for food systems has reached maturity and that municipal engagement must go beyond regulatory changes to investments supporting community food systems. Failure to reflect and correct course on public policy measures to strengthen community food systems will be judged as short-sighted by historians, much the same way that urban renewal policies are critiqued today (Raja et al., 2018). As mentioned earlier, Raja et al., (2018) classify local and regional government (LRG) policies as (i) soft policies, (ii) official plans, (iii) ordinances, bylaws, and regulations that are legally enforceable, (iv) actions that provide physical infrastructure, as well as (v) fiscal enactments that influence community food systems. The first two offer broad guidance and the remaining three facilitate implementation. This dissertation explored the realities and challenges from the perspective of alternative farmers in Hawaii.

While the State of Hawaii has adopted public policy language supporting farmers to achieve food security and self-sufficiency (State of Hawaii, 2012), there is a growing concerns among farmers and legislators that implementation is lacking (Yerton, 2019). Some legislators in Hawaii such as Representative Richard Creagan, Chairman of the House Agriculture Committee, suggest the implementation innuendo calls for audits of public policy efforts (Yerton, 2019). This dissertation intended to fill the gap in implementation by producing farm-led perspectives on what support they need to increase local food production. Planners have identified that community food security efforts should focus on increasing income opportunities for the right farmers and bringing good food to the right people (Raja, 2014). While developing markets for farmers can support their livelihood, the demand for local food far outweighs the supply in Hawaii and across the U.S. mainland (Low et al.,

2015). An enhanced understanding of community food security means to acknowledge alternative farmers as a crucial component of community food supply. But their efforts are often underestimated.

Studies on farming in Hawaii show that the silent majority of farmers are small-scale, multiple income farmers who earn less than $250k annually and that their contribution to food security continues to be unaccounted (Bittendbender, 1993; Lincoln and Ardoin, 2015). Planning done without understanding the lived reality of farmers, their motivations and challenges is counterproductive to community food security as it fails to pay attention to farmers' perspectives. It is vital to invest in farmers' increased capacity on the farm and address their challenges of scaling-up production, not just developing market opportunities for farmers. Through farmers' own involvement, this research found that key priority areas, to increase community food supply include improving availability of skilled labor, expanding procurement in targeted programs to incentivize increased local food production and encouraging community oriented food hubs discussed in Chapter 7.

Yet those supports assume that increased local food production is a priority in community food systems. While increased food production is a priority in Hawaii, where over 90% of food consumed is imported, most food planning theory and practice have missed the importance of including the voices of farmers in the planning process. A majority of planners suggest focusing even more on the food insecure population. For example, Horst (2017) suggest that future government engagement must move towards a deeper level of supporting food justice which will require municipal food systems planners to see their roles as agents of radical social and political transformation, not limited by land use regulation and program implementation (Horst, 2017). In addition, planners will need to engage more deeply in anti-racism and anti-oppression movements and to fight, where possible within their contexts, for resources for food-related programming and services (Horst, 2017).

Historically, community food security concerns were first triggered by anti-hunger concerns (Chen et al., 2015). The lack of LRG efforts to address farmers' needs can been seen by the fact efforts are addressing longstanding concerns such as farmland preservation and fair wages for farm workers (e.g. see Horst, 2017), which are different than addressing the concerns of operating farmers to increase local food production to strengthen community food system. Chapter 5 documented the organizational lifecycle of an alternative farmer to inform planners how the nature of farm challenges change over time as the

farm matures and commercializes. Farmland protection and living wages for workers are concerns, at best, for well-established farmers in an industry that is far beyond the stages of start-up, expansion and growth, and, at worst, for other stakeholder than farmers. This study find that small-scale, alternative farmers operating in community food system have not yet developed the concerns of farmland preservation. Some municipalities have done better at incorporating strong farm supports including King County, WA (King County, 2015) and in Canada (Robert and Mullinix, 2018).

This research has also offered a different take on the food justice debate that is inspired by planners' heuristic approach to civic engagement. The planning approach, in an attempt to be pragmatic, highlights how structural change can start from within and over time change the structures and outcomes that we as a society deem need change. Instead of drawing stark contrasts between profitable farmers and social justice, it is important to understand that alternative farmers will have no effect on social justice and not even maintain their own existence if they are not first profitable or working on a plan to become profitable. As a result, farmers' considerations about how to scale-up production, in fact, should constitute a new avenue for working on community food justice in the U.S.

Closing Remarks

This Chapter presented some implications for community food system planners, policy and research based on the findings of this study. In particular, this dissertation argues that the economic wellbeing of farmers and rural communities is a crucial aspect of improving access and affordability of good food for underserved populations. This is especially urgent for Hawaii politicians who have announced the importance of food security and self-sufficiency, but not yet matched it with effective policy for scaling-up local food production.

A few policy priorities were recommended to increase local food production and improve food security and self-sufficiency in Hawaii. Policy priorities include more support for farmers who grow food for local consumption through more funding for existing grant programs, and grant-writing, but also addressing the high cost of utilities in Hawaii and its effect on farmers' ability to fairly compete. Availability of skilled labor is the biggest factor that prohibits alternative farmers from increasing local food production. Through cost-share programs planners could focus on enhancing intern and apprentices salaries and health benefits. Another avenue to attract more labor to farms is to provide housing subsidies for farm workers. Finally, community oriented food hubs can greatly contribute to improved food security and agricultural self-sufficiency in communities that are predominantly Hawaii's Indigenous Peoples by facilitating the marketing and sale of existing food production from people's backyards. While the author has made his own interpretation of how and why planners and policies can support and incentivize small-scale farmers, this research also deliberately provided relevant numerical and descriptive accounts of farmers' realities so that anyone can read, evaluate, and analyze them.

Good food is without doubt a life essential that planners should continue to promote. Enhanced community food security is vital for a sustainable and healthy communities, but efforts cannot stop in the city. Farmers and the surrounding rural communities make up a crucial component of community food security that has been overlooked in planning. To eliminate hunger, planners have to address the economic poverty in farmer families and rural communities. Community economic development that result from increased local food production can positively affect small-scale farmers and provides a better long term strategy to reduce hunger than current efforts focused on improving food access in urban areas. Planners ought to promote not just good food consumption but production. Moreover, it is

important to understand the connections between food insecurity and housing shortages in rural communities and how these affect farm families.

Most humbling has been to conduct research with Hawaii's Indigenous Peoples. Dr. Ku Kahakalau and Dr. Manu Meyer transformed the author's way of thinking and urged that we are all community members driven by our passion for improving lives in our communities. When adopting the approach of Maawe Pono, an Indigenous Hawaiian research methodology, the researcher is first and foremost a community advocate who utilizes research tools to move the community forward. The research becomes more personal, more alive, and the findings are shared the way that people in Hawaii have always shared. In Hawaii, growing food is not only a livelihood but also a way of life. Much of this research has tried to document the lives of alternative farmers in Hawaii in hope that the findings can promote planners' efforts to improve the way of life for farmers and their communities.

Appendix

Appendices 1

The U.S. department of agriculture through the agricultural census collects data on local food sales. The first USDA census of agriculture for Hawaii was done in 1959 and direct sales was first recorded 1978 and every 5 years after that except for 1987.

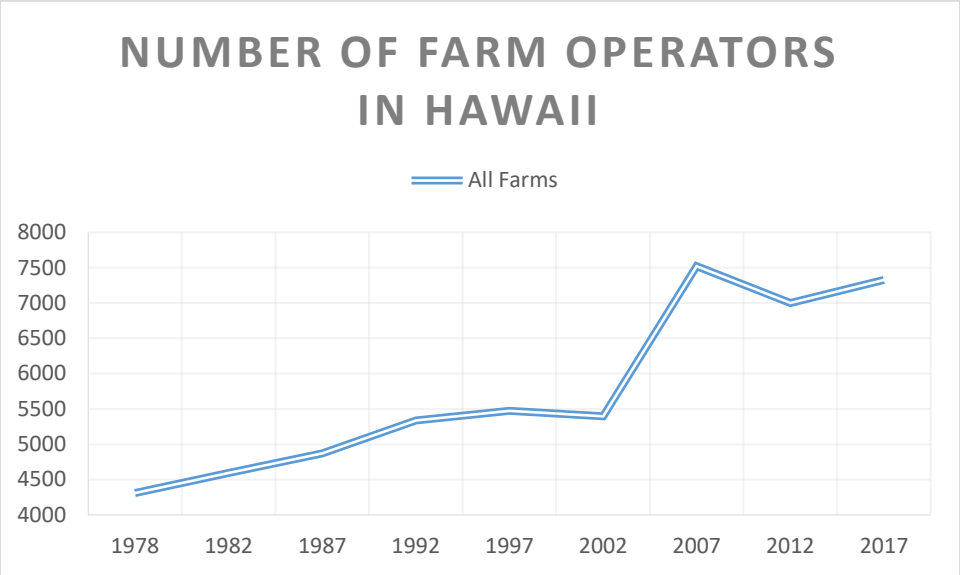


Figure 8.1- Total farm population Hawaii 1950-2012. USDA NASS 1978, 1982, 1987, 1992, 1997, 2002, 2007, 2012, and 2017

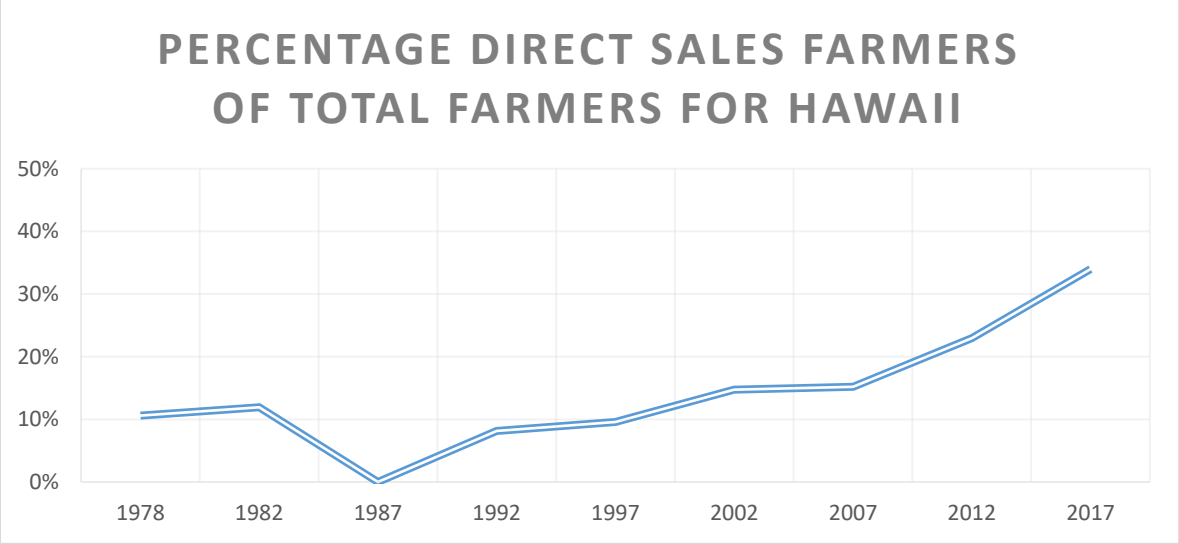


Figure 8.2 Shows the share of direct sales farmers compared to the total farmer population in Hawaii. USDA NASS 1978, 1982, 1987, 1992, 1997, 2002, 2007, 2012, and 2017

Figures 8.3 and 8.4-The local food industry is also likely to increase based on other trends in Hawaii's agricultural such as reduction in farm size and income over the last half decade that has affected conventional farming.

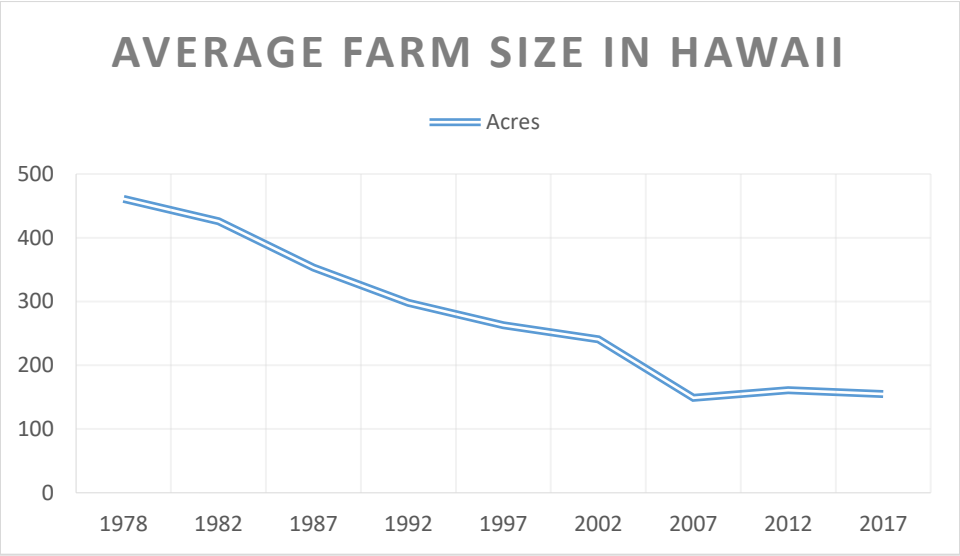


Figure 8.3- Average farm size Hawaii (acres). USDA NASS 1978, 1982, 1987, 1992, 1997, 2002, 2007, 2012 and 2017

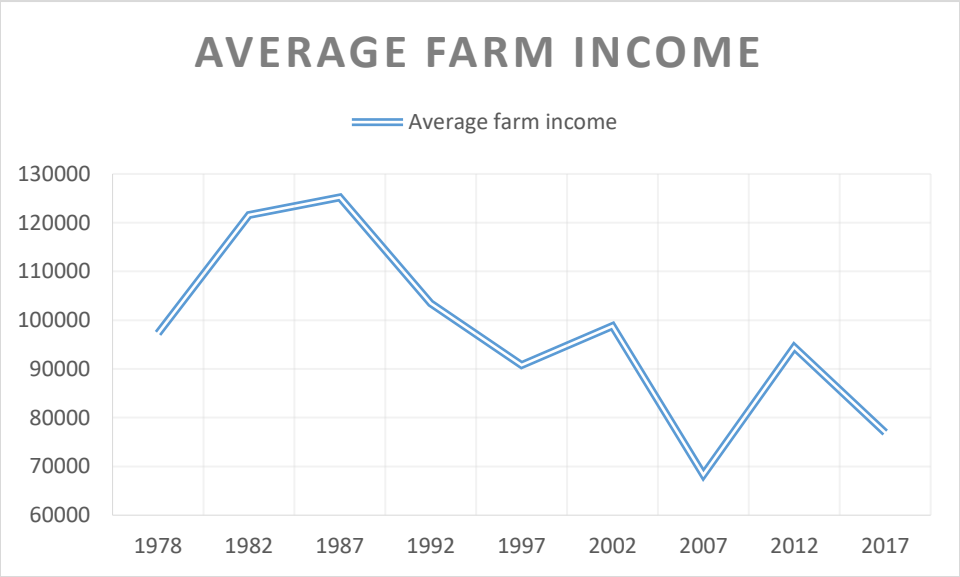


Figure 8.4- - Average farm income, Hawaii (dollars). USDA NASS 1978, 1982, 1987, 1992, 1997, 2002, 2007, 2012, and 2017

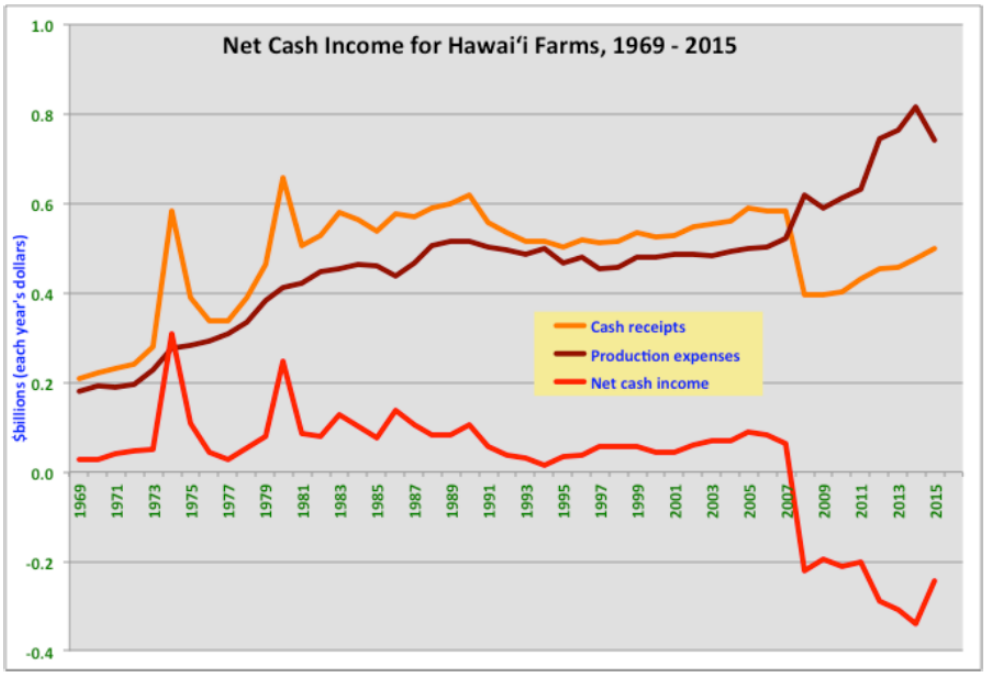
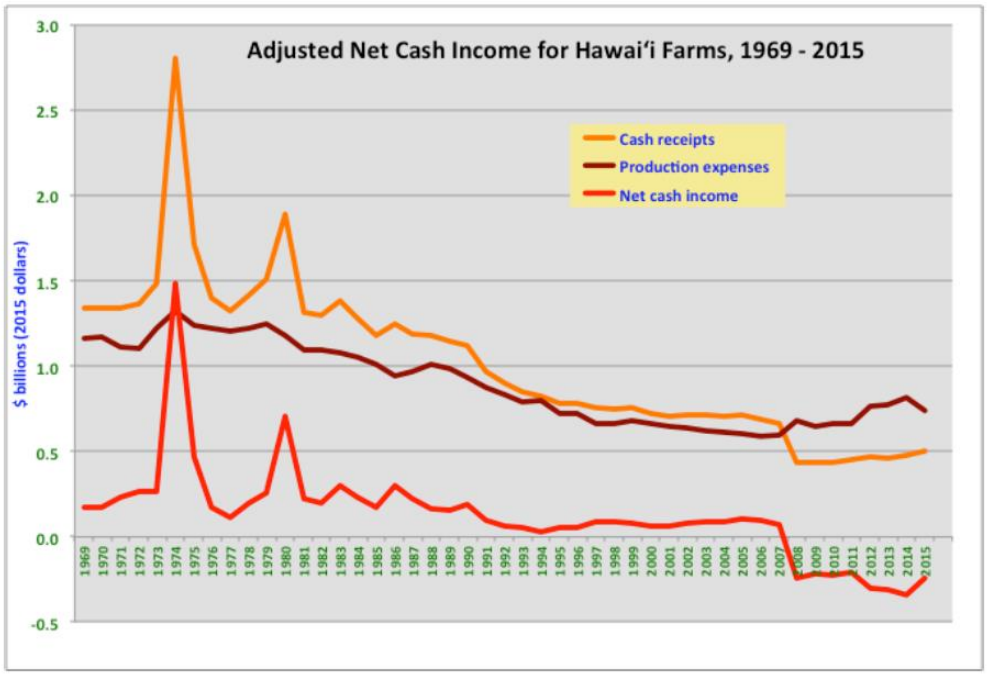


Figure 8.5- Net Cash Income (CRS, 2017)



Source: Bureau of Economic Analysis

Figure 8.6- Adjusted Net Cash Income (CRS, 2017)

Other related farm data	2017	2012	2007
Produced and sold value added commodities	567	488	513
Community Supported Agriculture	-	184	536
Organically Produced Commodities (farms)	146	138	135
Agri-tourism and recreational services (farms)	294	233	121
Agri-tourism and recreational services ($1,000)	$ 16,609	$ 17,768	$ 22,911
Hired farm labor- no. of workers	11,891	12,492	-
Hired farm labor- no. of farms	2,073	1,977	1,783
Unpaid workers- no. of workers	9,047	8,613	-
Unpaid workers- no. of farms	3,755	3,518	-

Table 8.1 Other related farm data. USDA NASS 2007, 2012, and 2017

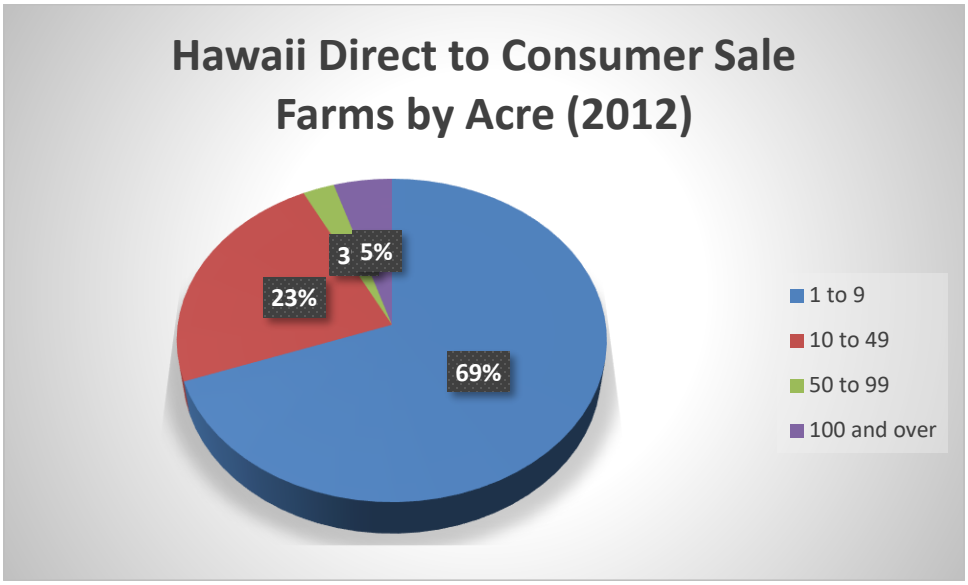
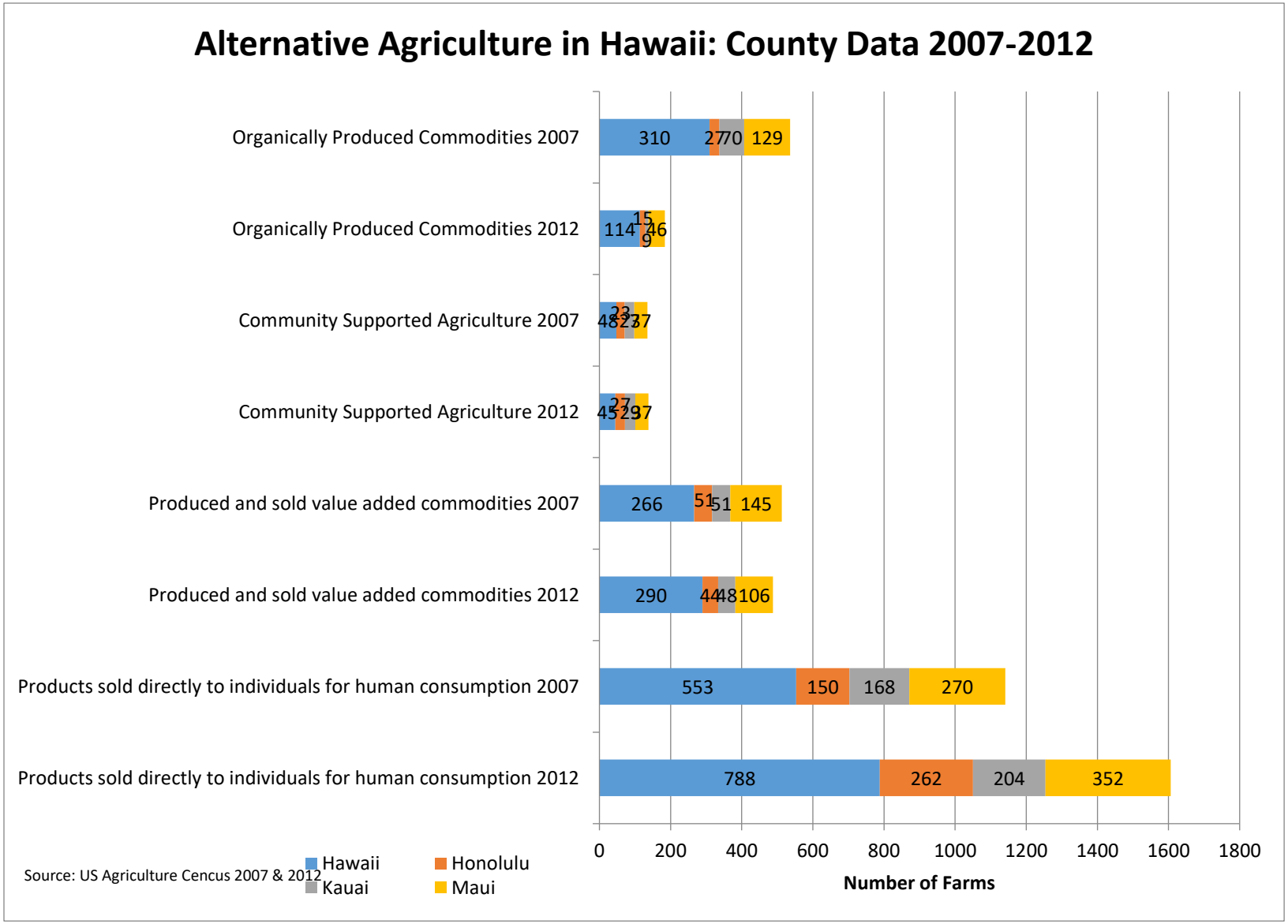


Figure 8.7- Hawaii Direct to Consumer Sale Farms by Acre (USDA NASS, 2012)

Figure 8.8 Alternative Agriculture in Hawaii: County Data 2007-2012



Appendices 2

Figure 8.9 Monthly Snapshot

Farmer Monthly Operational Snapshot

Item	Current	Desired
General		
Principal Activity		
Size (acreage)		
Acreage in Production		
Type of Tenure		
# Full-time		
# Part-time		
# Volunteers		
Years in Operation		
Initial Investment		
Turn- around days		
Monthly Income Goal		
Farm Expenses		
Water		
Electricity		
Fuel, Gas, and Oil		
Car / Truck Expenses		
Custom Hire (machine work, repairs)		
Rent/ Lease		
Payroll & Personell Expenses		
Payment on Insurance		
Payment on loans		
Interest on loans		
Freight and Transportation		
Packaging and labeling		
Feed		
Raw Material		
Seeds and Plants		
Chemicals/ farm inputs/ tools		
Supplies		
Farm Income- Products and Services		
Direct Sales		
Farmers Market		
CSA		
On-farm sales		
Wholesale		
Restaurants/ Hotels		
Stores		
Summary		
Total Expenses		
Total Revenue		
Profit		

KFH Grower Survey

Aloha, You are helping to create a pathway for helping us to better help you **A)** get top value for your food related products, **B)** access more land, and **C)** gain additional resources related to agricultural production/marketing/distribution. Any questions you do not care to answer, you can leave blank. Mahalo nui for your time and knowledge.

The following 8 questions are background questions to help get resources for A, B, and C.

1. What is your age? _____ **2.** What is your gender? Male Female Other_____

3. Do you identify as one or more of the following ethnicities or cultures? You may circle more than one.

Native Hawaiian Samoan Marshallese Chuukese Portuguese Filipino

Japanese Caucasian/Western European Other (fill in the blank)_____

4. Do you receive SNAP/EBT benefits? Yes No

5. How much money do you make a year? 0-$10,000 $10,000-$20,000 $20,000-$30,000

$30,000-$50,000 $50,000 and above

6. Do you farm? Yes No **If yes**, what do you farm?_____

7. Have you been growing/farming for 10 or more years in a row? N/A Yes No

8. Where do you grow/raise food? You may select more than one optionMy yard Someone else's farm

From my own farm that I own Friend/family's land A public space Other_____

A. Top Value for Your Dollar

9. How much money do you make from selling produce or other food related products? You can choose to answer by the week, by the year, monthly, or all three. Circle N/A if you do not sell and go to question 9.

N/A (Don't Sell) Weekly? _____Monthly?_____Yearly?_____

What do you sell?_____

Which product makes you the most money?_____
Which product makes you the second most amount of money?_____

10. Do you own a small registered business for selling food related products? Yes No

If yes, what is it?_____

If no, are you interested in starting your own small business? Yes No

If you want to start a business, what type?_____

11. If you sell food related products, where do you make the most sales? N/A (don't sell)

CSA Farmers Market Farm Hub Grocery Stores Friends/family

Other_____

12. Do you use what you grow/harvest/gather for any of the following (may circle more than one)?

Craft Medicinal Give away Compost Trade for other things

Nothing right now Other_____

13. Why do you grow/harvest/gather food?

Income Feed family or self Spiritual Cultural Take care of land/water

Health Other_____

B. Land Access

14. Do you need additional land for farming? Yes No

If yes, in a few words, how much and what would you like to use it for?_____

15. Do you own a registered farm? Yes No

If you do own your own farm, are your operations: USDA certified organic

Organic not-certified Transitioning to become USDA organic

If you own your own farm, do you refer to it as: Permaculture Conventional A food forest Other_____

If you own a registered farm, how many years has it been in operation? 1-5 6-10 11-15 16-19 20+

If you do own a registered farm, how many acres are available to you as an owner of your farm?

1-4 5-10 11-19 20-49 50 and over

If you do own a registered farm, circle if you own, lease or rent the land?

Own Lease public Lease private Rent public Rent private Other_____

C. Gain Additional Resources Related to Agricultural Production, Distribution and Marketing

16. Do you need more of any of the following to help sell a food/food product?

Equipment for harvesting	Yes	No	Cell phone	Yes	No
Childcare	Yes	No	Labor help	Yes	No
More time	Yes	No	Transportation	Yes	No

Is there anything from the above list that you especially need and why?

17. Is there anything you would like to learn more about (for example, grow a new type of plant, how to package something, etc.)?

Yes No **If yes**, what?_____

18. Do you need help with marketing/advertising products? N/A (don't sell) Yes No

19. Do you need anything to help with preparing (for example washing, packaging) products for market?

Yes No **If yes**, what do you need and for what products?

20. Do you have the necessary equipment for preparing products for market? Yes No
If not, what do you need and for what?

HFUU 2018 Membership Survey

Q1 Hawaii Farmers Union values its membership. In the spirit of collaboration and cooperation we are putting forth this survey to hear from you as to our mission of advocating while creating vibrant and prosperous agricultural communities for Hawaii Nei.

Q2 Which HFUU Chapter are you a member of?

- ○ Kauai- Chapter (1)
- ○ Oahu-Wai'anae (14)
- ○ Oahu-Waimanalo (3)
- ○ Oahu- North Shore (4)
- ○ Maui-Mauna Kahalawai (5)
- ○ Maui- Lahaina (6)
- ○ Maui- Haleakala (7)
- ○ Maui- Hana (9)
- ○ Hawai'i- Kona (15)
- ○ Hawai'i- Kohala (10)
- ○ Hawai'i- East Hawaii (11)
- ○ Hawai'i- Puna (12)
- ○ None (13) _____

Q3 Knowing that farmers face everyday challenges to provide locally grown food for the community, when applicable please answer the following questions	Strongly disagree (1)	Disagree (2)	Neutral (8)	Agree (3)	Strongly agree (7)	N/A (9)
1. I value being an HFUU member (1)	○	○	○	○	○	○
2. Numbers matter and drive my desire to be a member of HFUU (2)	○	○	○	○	○	○
3. Those making a living at farming should be taxed less then others (13)	○	○	○	○	○	○
4. I make it a priority to buy and eat local (14)	○	○	○	○	○	○
5 I feel enthusiastic about our collective future in local agriculture (73)	○	○	○	○	○	○
6. I am satisfied with my access to locally produced food (15)	○	○	○	○	○	○

7. I want to farm and make all my income from farming (5)	○	○	○	○	○	○
8. Non-farm income is crucial for me to maintain my involvement in farming (6)	○	○	○	○	○	○
9. I feel safe to invest in my farm even if it is on leased land (7)	○	○	○	○	○	○
10. I grow food for subsistence and to share with others (8)	○	○	○	○	○	○
11. HFUU has a pilot program on Maui through HDOA for a amendment dispensary; I would support purchasing (KNF) Korean Natural Farming amendments through this dispensary (74)	○	○	○	○	○	○

12. I can't grow my operation because of state and city zoning, permit regulations, and codes. (10)	○	○	○	○	○	○
13. It was easy for me to get the agricultural rate for water. (11)	○	○	○	○	○	○
14. I want more outreach about farming and gardening techniques (19)	○	○	○	○	○	○
15. HFUU funds can and should be used for chapter presidents and HFUU leadership to physically come together twice a year for strategic planning and the annual convention (18)	○	○	○	○	○	○
16.Through their efforts I am satisfied that the HFUU chapter in my region is bringing value to that region (20)	○	○	○	○	○	○

17. I use and value the local discounts I receive in being a member of HFUU (21)	○	○	○	○	○	○
18. I can't compete because food in the store is so cheap. (12)	○	○	○	○	○	○
19. I would like to see more membership discounts offered on my island (22)	○	○	○	○	○	○
20. I value and attend monthly meetings of HFUU (23)	○	○	○	○	○	○
21. I support using chapter money to make sure there is local produce available for sale at chapter meetings (24)	○	○	○	○	○	○
22. If I dont bring a dish I support paying for locavore potluck at meetings (25)	○	○	○	○	○	○

23. I am in a region that doesn't meet every month but I would attend if they held meetings every month (26)	○	○	○	○	○	○
24. I would like to volunteer my time and or talents to the continued development of HFUU (27)	○	○	○	○	○	○
25. I feel HFUU's standing as a charted chapter of the Natl. Farmers Union supports HFUU's mission. (56)	○	○	○	○	○	○
26. Prices of local food limits how much I can support the movement (31)	○	○	○	○	○	○
28. I value the newsletters and meeting notices that I receive from HFUU (33)	○	○	○	○	○	○
29. I value the legislative updates for me to comment on that I receive from HFUU (37)	○	○	○	○	○	○

30. I would like to have my yearly membership on auto renewal (34)	○	○	○	○	○	○
31. I value HFUU as an organization to be focused on being the solution rather than an anti-organization (35)	○	○	○	○	○	○
32. I value HFUU's solution-oriented focus and support HFUU in not using its limited resources to duplicate the efforts of activist "anti" organizations (57)	○	○	○	○	○	○
33. It is important to me that HFUU has a seat on the state board of agriculture (36)	○	○	○	○	○	○
34. Cover cropping along with other regenerative soil health practices should be a strategic objective for HFUU (58)	○	○	○	○	○	○

35. I would like to participate in efforts to explore new business models around collaboration. (42)	○	○	○	○	○	○
36. I would like help with business planning and attracting investment. (43)	○	○	○	○	○	○
37. I would prefer such help to be individualized (44)	○	○	○	○	○	○
38. I like to learn in a group setting so I can benefit from other's questions and suggestions. (45)	○	○	○	○	○	○
39. I have a clear understanding as to the organizational structure of HFUU and HFUF (46)	○	○	○	○	○	○
40. I like webinars and watching videos that do not require me to be in a particular place at a particular time. (47)	○	○	○	○	○	○

41. I need the peer pressure and structure of being in a group for learning or "drain the swamp" work. (48)	○	○	○	○	○	○
42. I like to make my own soil amendments and use cover crops, so I would not likely buy soil amendments from a Farmers Union venture. (49)	○	○	○	○	○	○
43. I value our HFUU President is the chair of the regenerative agriculture local food committee (RALF) for National Farmers Union (50)	○	○	○	○	○	○

44. I don't have time to market or find customers for what I produce and would welcome and be willing to provide a commission to a Farmers Union marketing hub that would help with processing, distribution, and branding. (51)	○	○	○	○	○	○
45. I can sell everything I grow and enjoy the variety and feedback that comes from interacting with community members and buyers. (52)	○	○	○	○	○	○
46. Farmers should be able to live on the farm (53)	○	○	○	○	○	○

Q4 Which is the single most important item to you from the previous questions. Please explain.

_____

_____

_____

_____

_____

Q5 When were you born?

_____

Q6 What is your zip code?

_____

Q7 What is your gender?

- ○ Male (1)
- ○ Female (2)
- ○ Other (3) _____

Q8 Do you identify as one or more of the following ethnicities or cultures? You may select more than

one.

- [ ] Native Hawaiian (1)
- [ ] Samoan (2)
- [ ] Filipino (3)
- [ ] Marshallese (4)
- [ ] Chuukese (5)
- [ ] Portuguese (6)
- [ ] Japanese (8)
- [ ] Caucasian/ Western European (9)
- [ ] Other (10) _____

Q9 Do you receive SNAP benefits (food stamps)?

- ○ Yes (1)
- ○ No (2)

Q10 Which of the following applies to you? You can select more than one.

- [ ] Farmer Supporter (6)
- [ ] Farming is my business (2)
- [ ] Gardener (3)
- [ ] Other (4) _____

Q11 Which of the following best describe your operation? You can select more than one.

- [ ] Food Production (1)
- [ ] Organic (4)
- [ ] Agritourism (2)
- [ ] Aquaculture (22)
- [ ] Landscaping (23)
- [ ] Farm to Institution (3)
- [ ] Farmer recruitment & Retention (5)
- [ ] Health Services (6)
- [ ] Emergency Food Provisions (19)
- [ ] Distributor (7)
- [ ] Food Safety (8)
- [ ] Infrastructure (9)
- [ ] Marketing & Promotion (10)

- [ ] Product Diversification/ Expansion (11)
- [ ] Processing (12)
- [ ] Training & Education (14)
- [ ] Technical Support (15)
- [ ] Transportation & Distribution (16)
- [ ] Restaurant/ Hotel/ Café (17)
- [ ] I don't have an operation (20)
- [ ] Other (please specify) (18) _____

Q12 Do you farm/ grow food?

- ○ Yes (1)
- ○ No (3)

Skip To: Q34 If Do you farm/ grow food? = No

Q13 How much money do you gross per year?

- 0-$10,000 (1)
- $11,000-$20,000 (2)
- $21,000-$30,000 (3)
- $31,000-$50,000 (4)
- $50,000 and above (5)
- I prefer not to answer (6)

Q14 How much is made on the farm?

- 0-10% (1)
- 11-30% (2)
- 31-60% (3)
- 61%-80 (4)
- 81-100% (5)

Q15 Have you been farming for more than 10 years in a row?

- Yes (1)
- No (3)

Q16 Where do you grow/raise food?

- ○ My yard (1)
- ○ Someone else's farm (2)
- ○ My own farm that I own (3)
- ○ Friend/ family's land (4)
- ○ A public space (5)
- ○ Other (6) _____

Q17 What do you farm?

_____

Q18 How many acres do you farm?

_____

Q19 Do you employ others than yourself?

- ○ Yes (How many) (1) _____
- ○ No (2)

Skip To: Q20 If Do you employ others than yourself? = No

Q20 How much money do you make from selling produce or other food related products? You can choose to answer by the week, by the year, monthly, or all three. Select N/A if you do not sell.

- [ ] Weekly (1) _____
- [ ] Monthly (2) _____
- [ ] Yearly (3) _____
- [ ] N/A DO NOT SELL (4)

Q21 What do you sell?

_____

Q22 Which product/produce makes you the most money?

_____

Q23 Which product makes you the second most amount of money?

_____

Q24 Do you want to start your own small business?

- ○ Yes (1)
- ○ No (2)
- ○ I already own a small business (3)

Skip To: Q34 If Do you want to start your own small business? = No

Skip To: Q25 If Do you want to start your own small business? = Yes

Skip To: Q26 If Do you want to start your own small business? = I already own a small business

Page Break

Q25 What kind of business would you like to start?

_____

Skip To: Q34 If What kind of business would you like to start? Is Not Empty

Skip To: Q34 If What kind of business would you like to start? Is Empty

Q26 Where do you make the most sales?

- [ ] Community Supported Agriculture (CSA) (1)
- [ ] Farmers Market (2)
- [ ] Grocery Stores (3)
- [ ] Restaurants (4)
- [ ] Farm Hub (5)
- [ ] Friends/ family (6)
- [ ] Internet/ social media (9)
- [ ] Contract farming (7)
- [ ] Other (8) _____

Q27 Do you need additional land for farming?

- ○ Yes (1)
- ○ No (2)

Skip To: Q28 If Do you need additional land for farming? = Yes

Skip To: Q29 If Do you need additional land for farming? = No

Q28 In a few words, how much and what would you like to use it for?

_____

_____

_____

_____

_____

Q29 Do you own a registered farm?

- Yes (1)
- No (2)

Skip To: Q34 If Do you own a registered farm? = No

Q30 How many years has it been in operation?

- 1-5 (1)
- 6-10 (2)
- 11-15 (3)
- 16-19 (4)
- 20+ (5)

Q31 Do you refer to it as...

- [ ] Permaculture (1)
- [ ] Food forest (2)
- [ ] Conventional (3)
- [ ] Organic (4)
- [ ] Other (5) _____

Q32 How many acres?

- ○ 1-4 (1)
- ○ 5-10 (2)
- ○ 11-19 (3)
- ○ 20-49 (4)
- ○ 50+ (5)

Q33 Do you own, lease, or rent land?

- ○ Lease public (1)
- ○ Lease private (2)
- ○ Own (3)
- ○ Rent public (4)
- ○ Rent private (5)
- ○ Other (6) _____

Page Break

Q34 Do you need more of any of the following to help sell a food/food product?

- ☐ Equipment for harvesting (1)
- ☐ Childcare (2)
- ☐ More time (3)
- ☐ Cell phone (4)
- ☐ Labor help (5)
- ☐ Transportation (6)
- ☐ Other (7) _____

Q35 Is there anything from the above list that you especially need and why?

_____

_____

_____

_____

_____

Q36 Is there anything you would like to learn about growing/getting food that would help (for example, grow a new type of plant, how to package something or make it grow better)?

- Yes (1)
- No (2)

Skip To: Q37 If Is there anything you would like to learn about growing/getting food that would help (for example... = Yes

Skip To: Q38 If Is there anything you would like to learn about growing/getting food that would help (for example... = No

Q37 What would you like to learn more about (for example, how to grow a new type of plant, how to package something, etc.)?

_____

Q38 Do you need help with marketing/advertising products?

- Yes (1)
- No (2)
- N/A (3)

Q39 Do you need anything to help with preparing (for example washing, packaging) products for market?

- ○ Yes (1)
- ○ No (2)

Q40 Do you have the necessary equipment for preparing products for market?

- ○ Yes (1)
- ○ No (2)

Skip To: Q41 If Do you have the necessary equipment for preparing products for market? = No
Skip To: Q42 If Do you have the necessary equipment for preparing products for market? = Yes

Q41 What do you need?

_____

Appendices 3

Volunteer survey responses.

Initial Report

Last Modified: 08/13/2014

1. Volunteer Background

Home state	Age	Last degree completed	Prior Occupation
California	38		farmer
ontario	26	university	construction
NJ	22	Bachelor's	Youth services
Japan	35	bachelor	graphic designer
Florida	28	GED	Cook
British Columbia	25	Communications	Student
CA	24	High school	Server
New Jersey	22	Bachelor of Arts	Student
Hawaii	25	B.A.	Student
Spain	23	Business management	Student
Ohio	23	Bachelor's	Research
Minnesota	25	some undergrad, culinary degree	manager of seafood eatery
Jalisco	25	Master	Financial

2. Do you have prior experience in conventional farming?

#	Answer	Bar	Response	%
1	Yes		2	17%
2	No		10	83%
	Total		12	

3. If yes...

What types of crops/product?	Where was the farm	How long did you work there?	What type of farm (1. family, 2. salary, or 3. volunteer) pick one
	hawaii	1 month	volunteer
Fruits and fish	Waimanalo	Less than 2 months	Volunteer
organic vegetables	Waianae, HI	3 months	3
soybeans, beets, papaya, taro	Waimanalo, HI	6 months	salary

Statistic	Value
Total Responses	4

4. Do you have prior experience in organic farming?

#	Answer	Bar	Response	%
1	Yes		8	67%
2	No		4	33%
	Total		12	

5. If yes...

What types of crops/product?	Where was the farm	How long did you work there?	What type of farm (1. family, 2. salary, or 3. volunteer) pick one
vegetables fruit	hawaii	8 months	aprenticeship
Fruits, vegetables, root crops, salad	Waianae	8 months	Salary
Basic veggie crops	Vancouver	1 season	Volunteer
organic vegetables	Waianae, HI	3 months	3
salad greens, root vegetables, herb plants, tropical fruits,	Waianae, HI	4 months	Volunteer
wide range of fruits and veggies	Vermont	1 month	volunteer
Lettuce, onion, carrot	Oahu, hawaii	2 months	3
Lettuce, greens, herbs	Hawaii	2 times at 2-3 months	3
a lot of vegetables, eggs, some species, fruits	at the west cost of Oahu, Hawaii	2 months	volunteer

Statistic	Value
Total Responses	9

6. Have you WWOOF'd before?

#	Answer	Bar	Response	%
1	Yes		9	75%
2	No		3	25%
	Total		12	

7. Have you started a farm on your own after a WWOOFing experience?

#	Answer	Bar	Response	%
1	Yes		2	18%
2	No		9	82%
	Total		11	

8. If yes, please describe the farm

Text Response
i haven't started a full scale farm but our rooftop has been converted into a garden, where we grow fruits and veggies some herbs and lettuce and spicy peppers.
small garden with different vegetables at my house. using the methods of compost i learned from farming.

Statistic	Value
Total Responses	2

9. If no, why not?

Text Response
I do not yet have a permanent residence. But I do plan to start a garden once I have a home.
I dont have my own land yet.
I do not currently own any property to host WWOOFers.
Financially unable to start a farm at this time.
I WWOOFed in order to try something new/have an adventure as well as gain the knowledge to one day grow my own food. I live in an apartment right now so don't really have the space for a full-scale garden, but I plan on it one day!
Not at the place in my life to do so
Right now I am not interested on making a farm, I want to work as a financial for some time and travel, but like in 10 years from now I want to start one for my consuming and for selling organic food.

Statistic	Value
Total Responses	7

10. Hawaii WWOOF Experience

Date you arrived in Hawaii	How many different farms in Hawaii have you WWOOF'd on?	Date you began WWOOFing in Hawaii
april 200	10	april 2000
march 1	1	march 2
5/20/2013	3	5/20/2013
March 2013		April 2013
August 1st 2013	2	September 1st, 2013
march 2013	1	
03-25-13	2	same
June 2013	3	June 2013
N/A	1	3/2012
28/06/2013	1	29/07/2013
9/4/2013	2	9/5/2014
sep 5 2014 (this is my third time though)	1 (multiple times)	2011 the first time 2012 and 2014
june 3, 2013	just one	june 3, 2013

11. Will you WWOOF on another farm in Hawaii after this farm?

#	Answer	Bar	Response	%
1	Yes		6	50%
2	No		6	50%
	Total		12	

12. If yes, where/why?

Text Response
Big island
i had a great experience while working on the farm in general, while we were their we visited other farms and saw different models that intrigued me. there is no specific farm i would choice only that i would definitely do it again.
I had a wonderful experience WWOOFing and feel like I was treated well. I realize not all farms are equal but having a positive experience WWOOFing allowed me to see that there are really great farms out there that have core values that I can relate to and work with.
I will WWOOF on northshore,Oahu, or Maui. They are beautiful places.
Hana Farms on Maui, in order to explore another island
Because it was a really good experience, being all the time involved with nature and in a really nice place, also because I want to learn more about organic farms and help the people that has this type of farms. I will like to do it again in Oahu in the North Shore or in Maui

Statistic	Value
Total Responses	6

14. Motivation for WWOOFing (choose primary 3 options)

#	Answer	Bar	Response	%
1	To learn about organic farming		13	100%
2	To spend time in Hawaii		8	62%
3	To go back to the land		3	23%
4	To contribute to a sustainable lifestyle		10	77%
5	Because I had free time / Interim stage in life		2	15%
6	To travel/work with friends		4	31%
7	Other		0	0%

Statistic	Value
Min Value	1
Max Value	6
Total Responses	13

18. Volunteer Contribution

Labor: hrs per week	Activities included	Travel cost to and from the Hawaii (in US dollars)	Living expanses (in US dollars)	Other Contribution
40		500	200 a month	
35	harvesting, planting, weeding	750$	500$	
32	planting, tilling, watering, harvesting, washing, bagging, maintenance	$1200	$0	
20		$1000		
30	Shoveling asphalt, feeding fish, clearing land	1000$		
28	weeding, harvesting, planting, watering	500$	200$	
30	serving, farming	N/A	100 per day	
35	Weeding, Tilling, Seeding, Planting, Harvesting, Watering, Trimming, Washing, Bagging, Selling at Farmer's Markets,	700	$20/month	
35	all farm maintenance activites, aquaponics, animal care, operating farmers market stands	N/A	$1,000	
35	Harvest,seeding,plow	800	1500	
35	Weeding, seeding, harvesting, packaging CSA boxes, selling produce at markets, taking care of chickens, serving in the cafe, transplanting	Around $700 total	Over the three months, I probably spent about $700-$1000 on travel/dining out expenses	
30-40	plantong, weeding, general farm care, farmers market, value added products, cooking dinner	$700	free room and board only spend $ on beer and other things I want (candy sunscreen etc)	
30	Harvesting, planting, cleaning, building, fertilize, selling	580	370	

Statistic	Value
Total Responses	13

19. Future Plans: Return to prior occupation

#	Answer	Bar	Response	%
1	Yes		6	50%
2	No		6	50%
	Total		12	

20. Future Plans: Move on to a new career – related to the WWOOF experience

#	Answer	Bar	Response	%
1	Yes		5	42%
2	No		7	58%
	Total		12	

21. If yes, choose an option

#	Answer	Bar	Response	%
1	Start an organic farm		0	0%
2	Working in agriculture/food issues, but not as a farmer		0	0%
3	Continue education		3	75%
4	Move on to a new career – unrelated to the WWOOF experience		1	25%
	Total		4	

23. As a volunteer, did you expect to be educated on farming?

#	Answer	Bar	Response	%
1	Yes		11	92%
2	No		1	8%
	Total		12	

24. Did you receive farm education?

#	Answer	Bar	Response	%
1	Yes		11	92%
2	No		1	8%
3	n/a		0	0%
	Total		12	

25. Do you plan to stay in Hawaii after WWOOFing?

#	Answer	Bar	Response	%
1	Yes		5	45%
2	No		6	55%
	Total		11	

26. Volunteer Benefits (check all that apply)

#	Answer	Bar	Response	%
1	A livelihood		8	62%
2	Monetary savings		6	46%
3	Gaining organic farming skills and knowledge		13	100%
4	Gaining appreciation of food-land connection		12	92%
5	Gaining cultural insights		10	77%
6	Gaining friends		10	77%
7	A good break from routine / urban life		11	85%
8	Other		0	0%

Volunteer responses from survey essay questions. This section illustrates some short answers from volunteers that the author met at small organic farms in Hawaii. This was a follow-up to a survey that was performed with thirteen volunteer in Hawaii. The survey results can be found in the Appendices 3 and reflect some of the demographics and motivations for volunteers to help operate small organic farms in Hawaii. In this survey, the author asked if the volunteer's farm experience was different from their expectation. Because some scholars had suggested that volunteer farm workers were exploited for their labor (Ekers et al., 2016), the questions was deliberately asked if volunteers had the experience feeling "*used*" while on farms. There was also a secondary question asking, if anything, they would have done differently if they were a manager of volunteers on organic farmers. Twenty two people answered the first question and ten people answered the second question. Here are their comments:

Tommy: *"I felt like the farm was realistic in the work they asked their wwoofers to do. I didn't have many expectations, but I was never shocked or surprised by what they had us doing. They definitely expected us to work a lot but it was always doable and most always enjoyable."*

Claire: *"For the most part, no, I don't feel that [anyone] made any serious intention to use me in any way beyond my expectations. In my opinion, the farm was actually rather regimented in its expectations of what WWOOFers had to accomplish. Before even setting foot on the farm, WWOOFers are made aware of how many hours they must work per week and what daily tasks are generally required of them. The farm enforced a firm start time and end time for "work", while leisure time was open to do anything. This is not to say, however, that the farmer does not have high expectations of the WWOOFers. It's just the case that most WWOOFers also tend to have high expectations of themselves, so that when they are farming they are not actually pushed beyond their expectations (at least this was the case for me). For instance, I remember during morning harvest that we were expected to pick 5 lbs. of only the best-looking baby greens for Roy's restaurant. Sometimes our initial round of harvesting was not good enough, so we had to go back and do it again. Of course, these particular details were not mentioned in the online description or WWOOFer handbook, but for me it was not beyond reasonable expectation. Another example is the expectation of hitting a sales quota on farmer's market days. When I first started running the farmer's market at Kapolei, I was told that the general sales target is around $500. Even though this quota was never mentioned in the "job description" (and may seem a bit high for a first-timer), I did not feel that the manager was trying to use me beyond my expectations."*

Wesley: *"As a volunteer, I really did not have a clear idea of what the expectations were to begin with. Everything was very general and no details were given until I was on the farm. It felt like the farmer was not sure how to use the volunteers to their maximum ability. I think it is definitely OK for a farm to use volunteers as labor. It all begins as an open exchange, and the farm should outline exactly what they are offering volunteers, and what they expect from volunteers. Every farm has different needs and different accommodations, so if it was all listed clearly, volunteers can best select what will fit them."*

Jean: *"No, because as a woofer I knew that my job in the farm was to help in all the stuff related to farming and I was never asked to do anything else different from that. Except the days we went to sell the products in the market, I think this activity has nothing to do with farming, but in my particular case, I didn´t mind going because you receive so much from the farm so you won't mind helping this extra afternoon once in a while. And when I say that you receive many things from the farm I am specially referring to the way that the staff treats you."*

Trevor: *"My time [here] was my first farming experience, so I didn't actually have many expectations. I had expected to sleep in a tent and be more lonely than I was there, I suppose. In terms of the actual farming, I would have like to learn more about agriculture and why we did what we did. As a WWOOFer, I felt like we did a lot of rote tasks and repetitive labor. At the farm if I asked for more information and wanted to learn about something, the people in charge were always willing to take the time and explain further, which I appreciated (curious minds!). And I understand that schooling every WWOOFer that comes through the farm would take more time than it would be worth because the turnover can be pretty high. So anyway, I guess I expected to be taught more about farming originally? But I understand why farms don't take the time to do that. And I got a great experience myself by taking my own initiative to ask questions."*

Anna: *"My experiences WWOOF-ing were both very different and were particular to the host and their needs. I have not found the work unfair since I usually communicate well before hand to know exactly what I'm getting myself into. I am very easy going and willing to be flexible and I've found that most hosts are the same as long as you are sure to keep them informed.*
My answer is no, I had never felt [a farm] was trying to use us because I felt they were giving us a lot more than just living place and food. They provided us not only comfortable housing and very healthy

food but also precious experience as living at permaculture farm, like a working with kids, handicap people, people staying there, local people there etc. some people might think it same as using but for me it was present something I can't buy money:)"

Tara: *"Yes. There were many times when the farmer would behave unfairly toward volunteers because of the economic pressures he faced at the farm or so it seemed- I am not sure what the real reason for the farmer's bad behavior is, but he couldn't keep himself together. During my time at the farm, at least five other volunteers left the farm because of the farmer's bad behavior that's half the group. He would expect that everybody knows how, not explain tasks well and snap at people when they do it wrong. When I first came to the farm our working hours were 27 hrs a week. By the time I left the official requirement was 35 hours a week, but we always worked over. I often got the feeling that we were only there for labor and even then I did not feel like the farmer and the community greatly appreciated the help of volunteers. Each week we worked over and still weren't appreciated for that."*

Rachel: *"It was my first time WOOFING and so I had just an unclear picture of what would WOOFING be about. My expectations were that I meet nice people from all over the world, work together but at the same time, spend time exploring Hawaii. I felt, that the farmer respected that when I was asking for something, I always got what I needed. The balance between working and free time was great at [this farm]! We had time to do our own stuff, the weekend was always a nice option to spend time somewhere else. To bring it into a nutshell: I felt very comfortable and not "used" in a bad way."*

Cat: *"Of the three different farms I've volunteered on in Hawaii, two of them had me performing work I had not originally expected. The work that was different from my expectations didn't necessarily mean they were trying to manipulate or use me for something I didn't sign up for. I believe that all the farm owners had the best of intentions. I simply believe those two farms that had me perform unexpected work were less structured and clear in what they wanted from volunteers."*

Steve: *"I can say that that the farmer was not trying to use us in a different way from my expectations, I mean that my expectations were working some hours per day and have bed & food but I have to say that we worked lots of hours per day. I think too many hours just for woofing but I think they were honest with their objectives, become organic certified farm."*

Liz: "*I would say that none of the farms I worked at used me in a way I wasn't expecting. Sometimes the work was hard and my back or hands would be sore, and sometimes the work was easy and I couldn't have been more relaxed. Either way I always thought that both parties got their money's worth."*

Roy: *"But to answer your question I never felt like [the farm] was misleading with their expectations but at the second farm I attended I felt like they were very misleading, they implied that all woofers would be moved into housing during their stay but there was not enough housing so we had to sleep in tents for the duration. They also made it seem like there would be an opportunity to learn about permaculture and eat food that we grew but the garden was unattended to and over harvested. So we were given processed Costco food mainly. They also expected us to work Christmas and the New Years with no additional incentive."*

Courtney: *"I wasn't feeling so. I got what I expected and had an amazing traveling experience. I worked the negotiated hours and got in exchange three meals plus a place to stay. Everybody was very friendly and I meet same minded people. I was able the experience Hawaii during my time as a volunteer to the fullest and it was just a unique way to travel a place I always wanted to travel."*

Chris: *"When I decided to join WWOOF and volunteer on farms, I had many different thoughts about what my experience would be like. However, after completing a wonderful three weeks at the farm, [the manager] used us in a way different than I had thought. He created a family and treated us all as equals, we all had a lot of responsibility on the farm and he trusted us with each task. Before arriving at the farm, I thought day-to-day work would be extremely difficult and mundane. Although the first few days of work took a toll on me physically and mentally, it pushed me to accomplish tasks that I had never thought I would be able to do. [The manager] had us partake in many different events and made us mentors for high school students that visited the farm. [The farm] fostered a family environment and the overall experience would be something I would love to relive over again."*

Hamid: *"I did not go into most farms with too many expectations. Those that I had (mostly weeding and harvesting) were fulfilled, and most other expectations were built up as I went from farm. When I started off the year I knew fairly little about farming, so it was all a learning experience. Most farms were good about my expectations of time and housing, although I did run into a few problematic ones. For example, one I went to in Texas was bad about letting their stress leak over onto the workers and we often ended*

up working extra hours due to a lack of good scheduling. Another in Mississippi led me to believe I would be doing farm work rather than picking up trash and tending to a highly neglected garden- I left that "farm" quickly. It was not a welcoming place. But some were wonderful about teaching me what to do and kindly making sure I had things right to farm. Some expectations I got that way were fulfilled at every farm (such as feeding chickens and collecting eggs) and some (such as repair work) were only used on some farms. I appreciated how many of the farms I was at hosted workers. Those I appreciated tended to have some private space for each worker, a number of meals a week with both the other workers and those who owned the farm, and a set schedule. The organization was important. They also worked on making sure we not only knew what to do but why."

Mason: *"Absolutely. I think [this farm] comes from a place of good intentions, but those intentions get lost in poor communication from inconsistent, untrained management. It's not possible to teach people good sustainable farming techniques without an experienced farmer on staff. It's also difficult to provide training sessions when there is more of a focus on the profit than the experience. Ultimately, while it talks a good game about growing people, it uses them for free labor and holds them hostage from being able to do anything about it. You are expected to work full-time and participate in community activities once the farming day is done, leaving no time for other activities or learning development."*

Dylan: *"I think it is definitely OK for a farm to use volunteers as labor. It all begins as an open exchange, and the farm should outline exactly what they are offering volunteers, and what they expect from volunteers. Every farm has different needs and different accommodations, so if it was all listed clearly, volunteers can best select what will fit them. As for fairness, I think it should be no less than working for minimum wage. If the farm offers housing, that can easily be calculated to a monetary value. Same with food or anything else the host can offer. The work volunteers do should not exceed that standard."*

Clark: *"Hmm..I'd say to just make sure that what you offer will attract the kind of wwoofers that you want...[This farm] wanted people that really wanted to learn how to farm, and they did a good job of actually offering a good education. If you just want a bit of free labor/odd jobs that's fine, but people that are trying to learn farming will be disappointed. Farms that don't have much to offer shouldn't expect very dedicated workers."*

Rolf: *"No, because as a woofer I knew that my job in the farm was to help in all the stuff related to farming and I was never asked to do anything else different from that. Except the days we went to sell the products in the market, I think this activity has nothing to do with farming, but in my particular case, I didn´t mind going because you receive so much from the farm so you won't mind helping this extra afternoon once in a while. And when I say that you receive many things from the farm I am specially referring to the way that the staff treats you."*

Gabe: *"While at [this farm] as a wwoofer I did feel the farm was using us for different purposes than I expected. Although I expected to work and provide manual labor I did not think I was entering into a full time position as a farm-hand and manual labor worker. While at [this farm] we endured 35hrs a week in the fields from sun up to sun down. I felt that this was a bit too labor intensive. Also I expected to learn more and obtain more knowledge about farming practices. [This farm] did provide nice accommodations and fed us well but their arrangement did not allow for the wwoofer, whom are usually travelers, to explore the area. Overall I feel like [this farm] provided a space to meet people through intense 'volunteering' and an opportunity to learn a minimum amount about agriculture, the culture of Hawaii, and the island of Oahu."*

Sam: *"As far as the economic situation of the farms, it pretty much fit with my expectations. I had figured that money would be tight anywhere, otherwise why have wwoofers at all?"*

That was all of open ended survey answers from the twenty-two volunteers. And now for the answers about what they would have done differently. Only ten people answered this question:

Claire: *"My answer to this question all depends on the farm's goals and financial standing. If I were the farmer, I think I would actually host WWOOFers in a drastically different way. [the farm] is a beautiful place where young people can meet and learn to farm, but (as stated by the head farmer and owner) it is foremost a production farm, looking to make a profit. WWOOFing is a very mutual, give and take program and there is no decree stating that a WWOOFer must be an excellent farmer. Thus, it turns out that some volunteers are not too great at farming. This is not good for a farm that wants to make a profit, and is already running at a deficit. With this reasoning, if I was the farmer I would be more selective in my hiring of WWOOFers, so as to choose volunteers with more farming experience. Either this, or I would simply retire the WWOOFing program until the financial situation is looking up. Put*

simply, a farm can't expect newbie farmers who are just learning to till soil to work at the same pace as an experienced farmer. That being said, I still full-heartedly support the WWOOFing program. For a farm that is not financially in the red, having WWOOFers is a magical experience."

Wesley: *"As for fairness, I think it should be no less than working for minimum wage. If the farm offers housing, that can easily be calculated to a monetary value. Same with food or anything else the host can offer. The work volunteers do should not exceed that standard. If I was the farmer, I would have a standard operating procedure that I can clearly show potential volunteers and give them a good idea of what life will be like. I would try to find out what it is that they are interested in getting out of the experience, whether it be learning about farming, cheap way to vacation, or practicing some skill they have; and I would show them what I want to get out of them, and what they will receive in exchange."*

Jean: *"I will host the woofers the same way as I was host, because everything in the farm was as I expected, they even exceed my expectations. The place is pretty beautiful, the woofer house is also pretty nice with all the things for playing (like the ping pong table and stuff), it was also clean and in good conditions. They have some things you can borrow like the bikes and surf boards, the food you receive is delicious and well served. The work you do is farm work but it is not that heavy. The way they teach you farming and treat you was very nice. The extra things you have there like the [meditation] class was very nice also. So I think that the only thing that can make the host better is to have more classes in the afternoon for the woofers, for example: having 2 times a week yoga classes and 2 times a week meditation classes or something like that."*

Trevor: *"Also, when I was applying to WWOOFing places, I looked for farms that had more than one or two WWOOFers, because I figured there would be a natural camaraderie between people who share similar interests, right? And I would have happily had a less leisurely experience than at [the farm] for friends and good work. Especially as you get to know the farm/farmers and the difficult economic reality they face- along with the importance of the organic work they're doing- I think most would sacrifice a degree of comfort."*

Anna: *"If I were to host, it would simply have to depend on what type of work I need and I think the hosts really try to find the personalities to fit their needs."*

Tara: *"If I was in charge, I would make sure that the farm manager have the ability to engage and relate to volunteers at the same time as managing difficult economic challenges. Otherwise, the economics take away from the authentic experience of the volunteer. Also it would be better do not completely have a preconceived notion of what volunteers ought to do or who they are but instead allow some flexibility for different people to bring out what they do best."*

Rachel: *"Not really. It was great that we had, with the woofer house, our own place were we woofers could spend time together and design our leasure time like we wanted to. The difficulty to keep the house clean is normal, if up to 8 people share a house. I think, a tricky point for the farmer is to find the middle, between leasure time (keep the WWoofers motivated) and work time (we got good food and a great place to stay, so we were in the role to give something back)."*

Cat: *"If I were the farmer hosting WWOOFers, I would try to be as clear as possible in terms of what the goals of the farm are and what the volunteer's role is in helping to achieve those goals. Although noncommercial farms do provide great experiences for WWOOFers, for those volunteers who do want a more structured farming experience, I believe a commercial farm with organization behind it and a more structured schedule can better fulfill expectations. Although the work was hard on the commercial farm I stayed on, the work was expected and it felt like I was contributing towards a goal. In addition, the work paid off with a great community, great housing and food accommodations, and a beautiful work environment. I can't really say I would do anything differently. Most importantly, if I were the farm owner/manager, I think extra kindness and respectful communication would really keep volunteers happy."*

Roy: *"If I were to host wwoofers I would be a little more honest about the conditions that they would be going into so that they can be prepared. I would also make sure to express some sort of gratitude for their intensive labor especially on holidays when they are away from their families."*

Rolf: *"I will host the woofers the same way as I was host, because everything in the farm was as I expected, they even exceed my expectations. The place is pretty beautiful, the woofer house is also pretty nice with all the things for playing (like the ping pong table and stuff), it was also clean and in good conditions. They have some things you can borrow like the bikes and surf boards, the food you receive is delicious and well served. The work you do is farm work but it is not that heavy. The way they teach you*

farming and treat you was very nice. The extra things you have there like the [meditation] class was very nice also. So I think that the only thing that can make the host better is to have more classes in the afternoon for the woofers, for example: having 2 times a week yoga classes and 2 times a week meditation classes or something like that."

Gabe: "*If I was a HOST for wwoofers I would do it differently and would provide different services/accommodations for the volunteers. [This farm] was a decent experience. I would even consider doing it again. But I believe the experience of WWoofing can be managed differently and provide a more holistic vibe*."

Sam: "*Hmm..I'd say to just make sure that what you offer will attract the kind of wwoofers that you want...[This farm] wanted people that really wanted to learn how to farm, and they did a good job of actually offering a good education. If you just want a bit of free labor/odd jobs that's fine, but people that are trying to learn farming will be disappointed. Farms that don't have much to offer shouldn't expect very dedicated workers."*

New people drawn to agriculture: understanding the interns search for alternative livelihoods.

Michael, another intern in his early 30's came to Hawaii from New York. He used to work as a software engineer before he wanted to seek out an alternative lifestyle. Michael's story of why he was farming and eventually chose to leave the farm was not uncommon. As alternative farmers rely on interns at some stage of their development, studies have highlighted the importance of finding a good fit between the farmer and intern (Azizi and Mostafanezhad, 2015). Many interns have worked in the corporate world and large cities and feel removed from nature and being outside. They often come to the farm to experience a tight knit community where work and leisure is shared. This is a strong trend and farmers who have volunteer and intern programs receive many more requests than they can entertain. While volunteers usually stay on farms anywhere from one to three months, interns tend to stay from three to six months and apprentices stay on the farm up to a year. Volunteers and interns are often looking for different things; while some want to learn the skills of organic agriculture and running a farm, a big group seems to be motivated by the community aspect and being removed from "rat race" so to speak. But most people sought out farms because they wanted to learn about agriculture in a commercial setting and were expressed being happy with their experience of helping farmers. Farmers and volunteers alike feel that expectations should be set upfront in order to have a good fit for the farmers and the worker. Based on their experience only a few volunteers felt unfairly treated or that they should

receive minimum wage for the work that they are doing, but by large majority people felt that their experience on the farm was worth more than money can buy and was appreciative of what the farms had given them in return.

Michael spoke to the difference feeling of working in a small business setting with farmers compared to the corporate culture where he came from:

Michael: *"In your own life you can work as your own business or you can work with other businesses. Some of them are more empowering to the individual and some of them are less empowering to the individual. And there are a whole lot of models that you can point to. For example, this whole corporate structure I worked for I could only talk to the people a few levels above me. You did not have access to talk to anyone else above that and you didn't have the knowledge what happened on any other level. In that structure I knew exactly what I was putting in. But this is different, it is like helping out a small private business owner. And this place feeling like that, but being a completely different model on its own. I believe this place works on the inverted pyramid model. Normally you have a leader at the top driving forward a specific goal, aim, cause etc. This is more like were going to create the space with the goal to serve everybody and everything. And whoever comes with passion is going to be the leader. Or the founders are at the bottom, and the leaders are on the top of whole bunch of them and however many you want them to be there. And the more you set out then you strive then you do, you get to do it."*

Michael left the corporate world and started backpacking to different organic farms for six years:

Michael: *"I started traveling around, backpacking. I like some of the very basic services that were being offered. For example like having a shower it's something very basic but really fundamental things. I was searching for places to stay that were connected to homeless shelters and backpacking because those were the things that I wanted to work with. So when I was searching for it this place came up for both of those things so I thought it's a good match.*
I have no idea what it was, I had no expectations. I just wanted to come and check this out. I have worked for organic farms for about six years prior to this."

He shares the story of why he left the corporate world and also how it kind of came back to him as he was becoming more and more in-charge of work activities on the farm that reminded him of the corporate world, especially as the farm was growing:

Michael: *"I had left the computer world very intentionally seven two eight years ago. I was a web designer in New York City the rat race, the whole deal. I've always liked doing that work, problem solving, I understand computers, I like design aspects, the only thing I didn't like about it was sitting in an office... Originally Charmaine was the main office person who was trying to teach another volunteer how to do invoices. The other volunteer took them on but didn't like doing them. What I did was that I originally took over the original volunteers job. Charmaine quickly realized that this work was easy for me to do so I kept doing more and more. It came to a point where I was doing most of the farm billing. It was mostly for our restaurant clients I was doing invoices and making copies of receipts on a weekly basis. And then, on a monthly basis we would take all of those receipts and invoices and follow-up. So it started including that, and the numbers from the farmers markets, and the weekly CSA. This CSA project was something else that I was getting involved with. I would do the billing for it, I would do the information sheets for it on a weekly basis, and I made the forms for it. And then I just started simplifying it all. For example, I stopped using papers. It only took me three phone calls to find out that everything could be done electronically. I wasn't printing anything out anymore. Instead I kept the invoices on Google drive so they were backed up that way. And then I made sure that the main office and the farm office were connected to the same Google drive. After that I also started doing branding and some minor marketing...So now having done it again I think the ideal would be to do it part-time in a somewhat open air office. But that's not how it stays, it slowly just turns to more and more work. It seems like it gets inside of you and it's infects you. It's like the more time you spend in a chair the lazier you become, and the more time you want to spend in the chair."*

There are many similar stories to Michael where people end up doing the same type of activities they wanted to move away from. As the experience of staying on a farm becomes more like the work that people were trying to avoid, they often end up leaving the farm. He describes the type of activities that he has experienced at organic farms and talks about two different farm-to-table communities with respect to ideas about diet and health:

Michael: *"It's like the grit of farming. You're out there all day, you're in a hot field, you work really hard, and then you come home and you drink a beer and you deserve it. There is a brand to the farmer, or there's several but I have come to know one well. Drink the beer, eat the meat kind of farmer. It's like for example when you raise the chickens, eventually you have to kill the chickens, and then you get accustomed to killing. I have lived in several places like that. I have gone back and forth between that world and this very intense spiritual world. The spiritual world has strict vegetarianism, or something like no killing, so there seems to be a dichotomy between spiritual ideals and the modern farming ideal. I was vegetarian for a while, and then I had to kill a duck and I felt like Ha that wasn't so hard and I started eating meat again. After that, I remember teaching other people how to kill an animal for meat."*

But Michael explained that he soon felt like he knew more about farming than the manager. In his case, he did have longer experience but trusted the manager to be a good leader:

Michael: *"the focus on my time here has been the community aspect. I already knew about organic farming. Coming in here I noticed the Day three that I knew more than the farm manager about organic farming. But you are a better leader than I am, and you created this program so I will listen to you. But that's been tough, it's just like, it's not a question of intelligence or capabilities or anything but straight up experience. I had more years of experience. So as long as I've been here there has been different situation in dealing with the farm manager every month."*

Michael then reflects on how having little or no experience can be a good quality of the youth and new ways of doing things but that he is now at a point in his own life where he cannot ignore the growing up that he has done:

Michael: *"It has been me finally seeing like this very quality that I like about youth. It's like an attitude. I am going to do it this way because the way that my parents did it was boring. I think the reason this process gets done over and over again, a continuous repeating cycle is that we can always learn more. The youth bringing in the potential to destroy the old ways those are outdated. That is how life gets refreshed and that is why debate rages on forever. At the same time I'm at the stage in my own life wherever just done a lot of growing up, accepting of the formalization. It's like oh while these older people actually know something, experience actually matters. I just went through all of that. I'm than a stop blowing off responsibility. I'm than a stop blowing off school debt. I wanted to take on my own*

personal financial responsibilities. I wanted to build my own independence. I wanted to secure complete independence from any parental influences, and not even just parental, but even the government and the system support. I wanted to stop taking advantage of the system."

Michael also spoke about the model of "being paid for time commitment" at the farm and the feeling of never being able to leave:

Michael: *"The way this place is structured is that you get paid for commitment which is radically different than anywhere else I've ever been. Here you get paid more for how many years you commit. You get paid nothing for two months. You get paid a little bit for six months. You get paid a little bit more for a year. And I think there is even one more step beyond that. But here you can never leave your work. Because the BnB is happening. At this farm there is always more work to do and you can never leave it...It got to the point where I didn't have the creativity to build anything bigger here. The creativity, the leadership, and the drive. And from the other side bhakti Fest was just about to start. The opportunity is there for me were growing and they are still growing."*

Author: *"so essentially this place wasn't able to take you where you wanted to be?"*

Michael*: "and that's what my grand conundrum is. That's why I'm leaving this place but I'm saying something like "I'm free in October and I'm open to come back if there is a spot for me". I am willing and I would happily come back but I don't know. I see this place as having amazing potential and having an incredible unique model, the inverted pyramid that I envisioned, and the biggest thing holding me back is that honestly I am not ready to settle. There's so much to see and there is a whole world out there and I'm not ready to settle here."*

The authors own observation and reflection when talking to Michael in dated June, 12, 2016:

Author: *"the image that I can get from these conversations is that, on one hand, there is a very idealistic side and, on the other hand, there is a very materialistic side of the reality of interns and volunteers who stay at farms. The idealism is fueling people to come and support this organization and it comes from consumers and from people like you who come here and become producers. This whole thing that there is something different to be seen in the world and that we can create it together that it is what is fueling*

this place to run. At the same time, while that's being the fuel, you have a situation where nobody's given the thought of how to engage that. They kind of just assume that people will keep showing up to be the support of this organization. And so I agree with you that that's the dilemma because that's pretty much what is fueling this place. And then the opposite force seems to be keeping that motivation and inspiration of the people down. I've seen people here demotivated, coming with a lot of motivation and inspiration and then going down. I have never observed any opposite trends. Which makes it a big leadership and managerial dilemma of how do you inspire people to stay and work longer? How you sell organic and then how you are organic seems to be to opposite things one has to do with business and profits and the other has to do with the spirit of a movement. What we know from the research is that people like you contribute to the organic and to the local sector. And at the same time we know that people like you are coming to this place because of community living. So the final question. If I was the farm manager right now what would I have to tell you for you to come back in October?"

Michael: *"that we are going to stop trying to sell food for money… Or profit… And the whole model of the organization is going to be rewritten so that food is grown to feed the people and work is done to serve the people and come up with a creative way of getting paid. Because there is so much money out there…"*

Labor considerations from small farmers: volunteers, interns and apprentices. This section illustrates labor considerations of small farmers. The topic of labor was the most popular among farmers. As mentioned earlier, while some farmers relied on family, friends and in some cases paid labor, most farmers had a combination of unpaid labor i.e. volunteers, interns and/or apprentices that receive stipends, and few paid employees. Some farmers see a lack of interest in the local community to work on farms and find alternative ways of attracting help. Farmer Anuehea makes a comment about this. Anuhea: *"There doesn't seem to be much interest in the local community to get involved with agriculture… I've sent job posts to CTAHR but I haven't had a single CTAHR student come out here to the farm to do anything. And I've tried to keep those relationships open."*

Farmers turn to online networks where potential volunteers and interns look at listings of farms and can contact the farm operator about staying and doing work trade on the farm. Farmer Gerald speaks about the WWOOF network. Gerald: *"We had known about WWOOFing for a long time and basically it was just there is more to be done here than 3 people can do and so we looked for networks, appropriate networks to find people to work and that was the most widespread largest membership."*

Farmer Gerald described the experience of hosting volunteers on the farm. Gerald: *"It's really pretty grass roots it's up to both of those parties to be responsible with each other and just figure out if they can create a life together. So I do like that about it, what that creates though I that it creates you know there is a lot of young people out there who really earnestly want to just be able to move about the planet and see it and experience something that's different then what they have experienced up until that point which in a lot of cases is a very sedentary you know school orientated environment often urban and so that's a strong drive in young people and it ought to be and of course we have a part of ourselves that's interested in our food and where it comes from and our relationship to our food."*

Farmer Abraham points out that this form of stay is popular and that he receives about one request per day. Abraham: *"I have had WWOOFers from the beginning so from April 2009 so that's over 3 years, 3 and half years…I get approximately 1 inquiry per day about WWOOF."*

Farmer Sarah and Chester talks about operating farms with volunteer labor. Sarah: *"Having help with work. The source of labor for sure. With just the two of us and of course starting a farm is such an expensive endeavor that we haven't been paid and there is definitely no budget to pay anybody else so*

staying within the WWOOF system has made sense. So now there are other organizations like Attra, it has some kind of website, I don't know If its growfood.org that might be it, it seems to actually provide us with better candidates. Attra is some branch of the USDA that seems to provide information about sustainable and organic farming and it has two t's in it."

Farmer Anuhea suggest that couples make good volunteers and that local permaculture trainings will allow for better availability of farm labor. Anuhea: "*I think for small farms couples can be great because they are self-contained and do not need as much attention…I think there is a lot more programs available for people now. Everything from master gardeners to just volunteer days to all the permaculture efforts. Just Hunter and Matt alone teaching permaculture courses is going to raise the bar a lot.""*

Description of arrangements for volunteers, interns, and apprentices. As Farmer Jane hinted, volunteers do not always come with the best work ethic. With Hawaii being a popular tourist destination, many volunteers come primarily for vacation. Here is a comment from Farmer Richard and Gerald. Richard: *"I think being in Hawaii changes the nature of the program a little bit. You tend to attract people who are looking for a vacation type. So we tend to have folks who were expecting to work a lot less and have a lot more of a casual stay. What was a big turning point for me, so often I would bump head to head with these folks, I would feel like they were slackers."*

Gerald: *"I mean Hawaii is a place where it's possible to be poor you know pretty easy to get food stamps and just have an existence for goodness sake live under a guitar keep your eyes peeled for the avocados as you walk up and down the roads bum a ride to go pick papayas once every two weeks to get you enough money to do your laundry at the laundry matt. It's never going to get cold never going to get flooded and you can unplug from the system for goodness sake I mean you know you live 20 years in the system kind of a slave to it in the schools and what's everyone's telling you when you get out is you have to go to college you have to get a job, there are no good jobs any more you know other than being a slave."*

Farmer Arnold speaks about the type of volunteers that he likes to host at his farm. Arnold: *"O absolutely. I love to be around young people. I have two daughters in their 30's who are on the mainland*

and I don't see, and I have always liked to be around people. And I prefer people with a good sense of humor, I looking for people with good sense cooperation. I don't like grumpy people I don't like loners because not interactive everyday because it is a very close relationship you know I see these people many many hours every day for 3 months and so it's a very intense relationship."

As farmer Gerald had mentioned the volunteer and intern programs are flexible and it's largely up to each farmer to how they structure the work hours, the living quarters, and responsibilities of the volunteers and interns. Farmer Gerald explains about the volunteer program at his farm. Gerald: *"We do a 30hrs a week plus 5 hours community service and they kind of negotiate if they want to go camping for a week then we might do 40hours per week before or after so we are pretty flexible that way and it usually ends up being maybe 5 days a week, 6 hours a day each or so, thinking of upping it to 40 actually. But we are working 12 or 14 hours a day and we don't expect that of anybody who doesn't own the place. Still it's quite a contrast 40 hour and 70hours and so really what we are shooting for in this intentional community again is to be with people who you feel like you are all in it together with, everybody is pulling their weight equally, and you're at each other's disposal to ask to get something done, that's how life feels best to me…it's a great benefit to my kids I noticed to get to hang around people who are in their 20's rather than us who are in or 40's they learn new card tricks and card games they get new movie suggested to them everyone has their little something they either play the ukulele or they play the trombone and so that adds value definitely, adds excitement, interest and change which is important to embrace."*

Farmer James describes his volunteer program. James: *"It's 35 hours a week and they get room and board and they also get a car to use and they get a washing machine. I know other farms here where the WWOOFers get like a tent site and a hose to shower under and a little tinny nothing. Maybe some white bread, but like I say I try to treat everybody with love and respect as if they were my children. And that's the best I can do and I think 35 hours a week, I've been thinking about upping it to 40 because out of that 35 I might get 20. If It is like from 8-12 and 1-4."*

Farmer Arnold describes his volunteer program. Arnold: *"That has also changed over time. I began not having a particular time limit and was just hoping they would stay and then I went to a minimum of six weeks and that wasn't good enough and now I have a minimum of 2 months. And most people stay here 2-4 months… I have had a number of WWOOFers who are repeat people…they get full room and board*

and they give me between 28 and 32 hours per week. I usually, I nearly always I mean always have them work 4 days on 3 days off so that when they come to Hawaii they have to have opportunity to explore and to go surfing and the camping and so on and so if I have enough WWOOFers then one group will get off Friday Saturday Sunday and the other group will be off whatever Sunday Monday Tuesday or whatever because I always need a little help in the B&B. And as far as the work schedule is concerned you know I tell everybody I'm not interested in having you work more than 28 or 32 hours but I'm not keeping track of time."

Farmer Sarah talks about volunteer commitments at her farm. Sarah: *"It varies. Our requirements have changed our preferences have changed since we started. In the beginning we asked for a two week minimum commitment and it's steadily gotten longer so now we ask for a one month minimum commitment and really prefer to have people who are available for a season. We are pretty much all year round, but it seems that we get more contacts from people who are interested in a placement between the winter month and the summer months."*

Abraham describes his volunteer operation. Abraham: *"It has definitely been an important part of our labor… Well um we require 35hours a week, and I think that is more than many of the farms that are out here because we are really a commercial operation and so anyway we depend upon the people that are going to be here to really be helping out with the farm labor and helping contribute to us to become self-sufficient financially so we require more hours...well I started out with just a few and then I was up to an average between 5 and 7 for like the last year and a half and now I am in the process of cutting down, I'm cutting down to about 3 at the beginning of January and I think I am going to go between 2 and 3…you are their landlord, their boss, and on their free time they hang around with you."*

Farmer Barbara explains that she used to split her volunteers with another farmer. Barbara: "*Yes. Forty hours per week. They are subject to the same laws employment laws as others. So maximum forty hour work week. We were splitting them with another farm. There was two of them, they worked three days a week here and two days a week at the other farm. So I had them a little bit more.*"

Farmer Jacob explains that he enjoys having volunteers on the farm and the skills they bring. Jacob: "*These are bright, curious, adventurous, and interesting people. Most of them are young. They all bring their talents, skills, and background here. We try as much as possible to fit the opportunity to the person,*

rather than the other way around. One bright young women came in and she had some graphic skills. So we asked her to design our flyers for Halloween and other similar things. ..I always try to figure out who is interested in running all the water tests here (aquaponics) or who is best suited for running the black soldier fly operation."

Farmer Richard talks about the process of being a farm manager for volunteers who have no farm experience and installing a two week trial period. Richard: "*[they are] people who didn't know farming. And they wanted to live a more green lifestyle and learn how to grow food. Some of them really wanted to go on and make that their life path and others just want to round out their life experience and have those capacities to be able to grow home gardens and things like that. So you know getting that more clear and focused and developing more confidence to be an authority kind of figure, that was a challenge for me I have authority issues to this day I don't like people bossing me around and so it as tough for me to assume that sort of role that these are expectations this is what we are doing today and developed a team spirit after people were there they had a two week probation period where they could try us out, we could try them out and that gave them some time to see if they really could learn how to, not that everybody couldn't work but, some of them really weren't used to working with their hands and bending over for hours and so that gave them a couple weeks to try that and we could see how they are progressing, are they getting in the spirit of things, and so that was right in our upfront agreement we will sit down at the 2 week mark and have a conversation on if this is going to work for the rest of your stay or really maybe something else would be better. So being clear about those."*

Farmer Chester suggest that everyone who comes to the farm has a skill and that it is his job to find out what it is and facilitate that on the farm. Chester: *"Everybody who comes to the farm has something to give to it. I am a facilitator and my role is to help identify and encourage whatever that is."*

James makes a comment about finding the right number of volunteers:

James: "*If you get too many you too likely to get a bad apple in the group and it spoils it for everybody. So if it's a small number it's easier to be around the table it's easier to be in the kitchen.*"

Thomas: *"Then hopefully you get to something's to them by 3 weeks or 4 weeks like I can have someone plot up the lettuce on their own with just a reminder of the start, so that's why when we do our*

internships we really strongly like them to be a minimum of 3 months because then when you put in that month of training time and just getting settled getting through the first wave of mosquitoes, then they can do some work for you."

James explains the connection between volunteering and internships. James: *"Andre is here volunteering now and he is considering coming back here as an intern. He is from Australia and he's an extremely talented person. I would really hope that he is coming back. The interns tend to be more affluent perhaps from the east coast, but they tend to be seeking a new moment in life. They've been stuck in addiction and other things and are looking for spiritual reawakening. I came here as a political activist so I'm just learning this not my background."*

Farmer Nicole from Whidbey Island, WA said that all the work on the farm is done by five interns and three family member; however, currently only two family members. She had many good in interns because she learned about recruiting interns from running a summer camp for 10 years on her property. She learned from her experience how to select people that were a good match, how to organize them, and how to have them work toward her goals. The interns work approximately 40 hours per week and received a weekly stipend. The author asked her how she select her interns. She said there is a steady flow of applicants that want to come to her farm. She does not have to go out and seek them. There is indeed a lot of things for her to do and very little time. She said that one day she wants to be able to pay people and to be able to give out responsibilities. But as of now she can't afford to pay a salary even for a cheese maker.

Nicole: "*our main challenge right now is that we don't make enough money to pay people and therefore we cannot expand the business.*"

Farmer James describes his internship program and their responsibilities. James: *"It 40 hours a week. And it includes two weeks off paid vacation, and two weeks off unpaid vacation. There is no medical insurance included, but the compensation is $500 per month. So its $500 a month, a cabin- a place to sleep- and all the food is provided seven days per week but also wireless internet, laundry and all the utilities and so on.*

Well the thing that I was looking for was the record keeping, the bookkeeping. Because that is something I don't like doing. It's very tedious and time consuming. And also record keeping just in terms of the farm records stuff like the planting schedules, spring schedules, keeping just all those records updated and organized. And then of course the agricultural work and all the things that are involved in farming including weeding, and seeding the trays/ the flats, transplanting, maintaining the plants. The intern will be able to have those skills and to do that. And then the other thing is that they can become the person that is responsible for training the volunteers."

Farmer James describes the type of tasks that interns would do and makes the point that training them takes longer and that he likes to reward them with a better accommodations compared to volunteers who say in tents. James: *"One was a women from Wisconsin who contacted me about volunteering but she had already had quite a lot of experience working on farms…she seemed very organized and all that so the cabin were just getting finished and I threw that out to her whether she would interested in the [intern] position that would involve more responsibilities but some pay. She was all for it. So she came over and she had record keeping responsibilities and I also inputting receipts and invoices in our financial system. We use QuickBooks. We were doing that and you know it's a little bit more training because you have to go over different categories of expenses. She stayed for 3 months."*

Farmer Jacob provides his volunteers with tents and three meals per day. Jacob: *"We provide tents, and 3 meals per day, we cook the food too. Sometimes the volunteers cook."*

Arnold estimated that he invested $6,000 to establish the volunteer living quarters and that approximately $12,000 on food per year. Arnold: *"So that's one thing, the second thing is it took me about 2 years or so within a investment of $6,000 where I over 2 years where I created a environment for the WWOOFers so that they have their own two rooms with 4 beds and that they have their own showers and that they have their own flush toilet and that they have room where they can cook everything and have fridge and gas and all of that. That's an investment…especially they like to eat well and I'm only allergic to wasting food so that costs me depending sometimes when I have 3 young men in their 20's they eat like horses and some young woman don't eat that much so it varies but I actually I'm saying alright let's say I spend $75-$100 per week on food for people and sometimes its $50 per week so on average if I have let's say 5 WWOOFers I spend $250 a week on food."*

Farmer Gerald describes the living quarters for volunteers and interns. Gerald: *"Well 3 or 4 probably. We have two storied coffee shack with several little bedrooms and a shared kitchen and that worked out pretty well. And we built a separate, another little 12 foot square house with a sleeping loft I guess its 16 foot square and composting toilet outhouse and shower. And that would be with someone that was going to be staying for 6months or you know they would kind of end up being sort of the foreman of the WWOOFer."*

Farmer Sarah describes the living quarters for their volunteers. Sarah: *"Yea we built a small, we call it the cabin, but it's about 12 by 16 feet indoor covered space with the sink and a counter and then we have cooking outside under a overhang because it is quite rainy here. So that we consider being like daytime living, cooking, reading space for living and then there is an outhouse and an outdoor shower with hot water. For sleeping we ask people to bring their tents."*

Farmer James makes a comments about his preference to pay people, in part, with the cabin rent-free on the farm and sharing profits with interns. James: *"No…well I would want to do it with the cabins where they are part of the pay. If it is a person you who had a need for a place to stay, because to me you see I would rather include that because its more affordable, there's more value in allowing a person to stay here rather than having to pay them a market rate. Because you know $10 per hour, what is that, say it's a $100 dollars per day, that's $500 per week versus paying a person $500 dollars per month plus providing them a cabin. I mean if they are really it might I might be able to do it for a thousand dollars per month. That should pay a person plus providing a place to stay. One of the other things I wanted to tell you about the internship program is that there is going to be a profit-sharing aspect- a bonus aspect so that they know that if our production increases because of their presence, we're able to make more money and actually getting into the black, then they would be able to get some bonus from that. The other thing I guess is just my response to that I and I'm sure some of the other farms that have done this is not to replace farming as an economic activity that is taking place but it is to supplement it. I can see the value of doing it because farming is hard work and there is not that much money in it… But I'm not throwing in the towel yet but."*

Challenges with volunteers on farms. As you might have gathered from some stories, having labor live on the farm comes with some challenges. What follows are farmers comments about the challenges they have experienced with labor whether volunteer, interns, or paid labor, and a few

consideration on what they have learned along the way to minimize the challenge. Farmer Barbara shares a story of how operating with interns was different than what she expected. Barbara: *"We decided to try intern because I love teaching, I love tutoring. For an intern you pay them a stipend and you provide them a place to live and you provide them food. So room and board. So we tried interns but we were already too close to losing the farm. And the first week they came in they broke fifteen hundred dollars' worth of equipment."*

James share some of the challenges of operating with volunteers. James: *"So what I am experiencing here is the challenge with this WWOOFing personally is that we are on the website and these kids call me up and I have had to learn right away I have had 4 different people come here that are bipolar it's a total nightmare, 3 of them ended up in hospital you know how hard it is to get committed in Hawaii, very difficult. I don't want to be around cigarette smokers and I have a vegetarian kitchen so I would say that 90% of the kids that come here are you know are alcohol drinkers a lot cigarette smokers and most of them are meat eaters but here on this farm so they get a chance to experience another way of living that you can live and eating off the land. So what I do now when I interview them is I try to discourage them, I am very very clear that they are coming to a farm where this guy has been doing it his whole life and this is a working farm this is one of the few truly honest to God working farms."*

Farmer Thomas shares about taking on people who are willing to sweat. Farmer Thomas: *"basically only take on people who are ready and willing to work to get out there and sweat and demonstrate at least an average amount of balance and dexterity and ability to be in their body whether its comes from having done sports or having been into yoga a little bit in some cases just a real earnest burning desire like the power of youth has been held back."*

Farmer Arnold shares that many of the volunteers have not been part of a profit and loss operation before. Arnold: "*Many people will come here have waitressed or done this or done that and worked the summer in construction, but they haven't really been part of a profit and loss operation and so this is a real enterprise and they see how important it is that I get all of these things done or it won't happen. Farms are a precarious business unless they are really big and then you have all the stuff but I have a huge economic nut to crack a financial nut to crack every month and we can only do that because the farm, the farm makes no money the farm only costs money, but the coffee business makes some money, out B&B makes some money but the two monies together is not enough for us to live on."*

Farmer Sarah says that having volunteers on the farm divides her attention and there is a feeling of no privacy. Sarah: *"The feeling of not having privacy or not being able to close or take the weekend off. I have two small children, I have a 5 year old and a 2 year old, it definitely divides my attention."*

Farmer Abraham shares some of his challenges with volunteers and some things he have learned along the way. Abraham: *"Yea I mean drinking is an issue. I mean I allow people to drink here but you know I have some WWOOFers that have gone off in their free time at night and drank a lot and had one WWOOFer drinking who I told to stop doing something and she couldn't comply so I had to ask her to leave. So that's been a problem. It's harder when there are more like attitude things when people come with a chip on their shoulder or are not able to take directions very well for whatever then and it hard once you have people here you know they come from far away and they are here so it's not like you can just fire them well I guess I could. In fact that is something I'm going to start putting in my, I go through a process of screening people so through emails that I get and then I have a set of information that I provide about our living situation, the amount of hours that we require, but I think I am also going to add to that the whole that there have been sometimes in the past where things have proven to be difficult and so we reserve the right to be able to ask someone to leave if things aren't working out and so just to let them know in advance."*

Farmer Thomas comments about managing volunteers, being perceived as a parental figure, and ending the relationship if things do not work out. Thomas: *"when we are sharing more of our time together we find that it's just, on some level you just got to be honest with the people you are around day in and day out if you're not, if you just play it nice and gloss it over well then it starts to eat away and so we find ourselves making comment, suggestions and reflections about certain aspects about behavior that we observe and suggestions for shifts to changes and at times requirements for shifts and changes. It's a hard role to put oneself into in a relationship to another person especially if it's not explicitly invited or agreed at the start and then it's likely that you're going to end up receiving projections being a parental figure to some extend or another not always not necessary and sometimes people like young Ben who is here a couple months ago are very open to like they are ready to hear it they need to and they recognize that and so are willing to hear it and that's worked really well sometimes. If they aren't ready to hear it well then it's time to part that relationship sooner rather than later."*

Farmer Richard shares about his experience with being exploited and considerations for inviting a person to the farm. Richard: *"Yea they weren't you know doing their share, that they were kind of exploiting our farm and they would feel similar to me that I was a slave driver and I was exploiting them right. And finally it dawned on me; you know these guys aren't wrong. They can work 5 hours a week just someplace else. So I stopped judging them and started getting real clear on these are the conditions to be here and that helped right out front before I even invite a person. Not that we were slave drivers, they worked 6 hours a day 5 days out of the week so that's 30 hours, they get room and broad, every now and then I have an extra truck that will get them down the road to the beach and back."*

Farmer James shares a comments about the challenge of communicating with young volunteers, they have short attention spans, electronic devices, and problems with Ritalin. James: *"So the problem I guess that I'm having and I just went to a big bump with these kids here is that it's listening. Electronic devices. Kids they don't, most of them and I didn't know that most of the young people that come here more than half of them had all been Ritalin when they were little… there are 3 kids that were on Ritalin. I find that astounding but I don't find it so amazing because the drug companies run this world and they want everyone to be on drugs and so what happens is that the young people that come they have an extremely short attention span and they have very difficult time listening most often I'm speaking an alien language because no one seems to understand what I'm trying to explain, I'll explain to them do this and I'll come back and I'll tell them to put the ball in the red circle and the green square in the green and it's just the other way around like how did this happen."*

Farmer Zachary describes what to expect from volunteers such as the ones that come through the WWOOF network and having a 2-3 month minimum stay. Zachary: *"I mean there good kids but they are not farmers. They don't come from a farming background. You do get some loafers, and some people are just here for a vacation...you know, but right not I have a solid crew, they're all here long term. So that's what you go for. After a couple of years of managing volunteers, for us, we like a 2-3 month minimum. You know we don't want somebody coming here just for a couple of weeks."*

Farmer Barbara shares more about her intern experience and how she called to check on the interns references. Barbara: *"So they weren't very well motivated to help, to contribute, or to do things. I was there with them a lot. I had one of them in the cheese room with me. They were leaving another dairy. I called them for references and they told me wonderful things. And then two weeks later she called me*

back and she said: "I'm sorry, I just wanted them gone." They were here for six weeks. During those six weeks they averaged probably about seven-hundred dollars of damage. Tools they broke things they broke above and beyond the other costs. We were so close to closing, this was our last shot at it. It didn't work out."

Farmer Thomas explain the pros and cons of having a volunteer based operation and recommending to have separate kitchens:

Thomas: *"Yeah. The pros are to me inexpensive labor, you get to meet a lot of unique people from around the world. The cons are you do have to have a communal living situation and you have to manage people…but for someone who is gonna have volunteers I'd say start with a 3 month minimum, no teenagers, everything really clear from the beginning of what they get for the amount of hours they put in, we go for 25-30 hours per week and they get 3 meals per day. If you at all can, you should have a separate kitchen. That's a big one I guess. Kitchens and bathrooms would be all ideal. Here we share bathrooms and showers. But it's not for everybody. Not everybody wants to wake up with 3 people sitting around the table making a mess in the kitchen."*

Farmer Sarah suggests that some volunteers would likely be happier and stay longer if they were paid, and also about some of the mishaps from having a volunteer-based operation. Sarah: *"Yea it's kind of a 24 hour, not that a lot of supervision is needed, and actually I do like it when people check in with us more rather than us. We have had plants cut like by weed whackers, cover crops pulled out while weeding; we had a window broken once. We have people leave without saying anything once in a while. Well I think that a WWOOFer who is paid is no longer a WWOOFer. And the kind of people that we get, if they were paid then I think they would stay around longer and they would be happier and they would be better workers then they are as unpaid workers."*

Farmer James talks about wanting to connect with the young people that come through his farm and to allow them to feel the healing power that he experiences with the farm. James: *"So I try to teach the young people that that's why when they go out in the field, I don't allow iPods in the field. I go out there and if I see them with their earplugs on I go out there and ask them please don't bring these out to the field I want you to be here I want you to listen you your story. What is your story, why are you here, feel yourself on the ground, feel yourself being alive. I think that these things really take that element out of*

people's lives, there always caught up in someone else's trip, someone else's drama. And the beautiful thing about farming I is that if I can get someone else to drive my truck and pay the bills I would be happy to be happy to be pulling weeds from sunrise to sunset because for me it's very soft, it's very healing both physically and emotionally, it's a very meditative."

Farmer Abraham describes problems with permitting and zoning as his farm operation relies on paying interns in-kind, to exchange some hours of work for free rent. Abraham: *"yes one is a question about the accommodation because of the zoning issues… putting up more structure for dwellings… so I would have to or people in agriculture would have to face that question. About permitting and zoning…"*

Farmer James says that if he had the money he would hire Filipinos, not volunteers because more would get done. James: *"[I could hire a] labor force and they are Filipinos and if I had the money I would go out for $10 an hour and I could hire 3 or 4 Filipinos that could do the work that 50 workers could and I wouldn't have to go through all this emotional drama that I have to go through. It's pretty hard on me sometimes I'm mean recently it was."*

In summary, farmer have experienced a fair share of challenges with having their workforce live on the farm and many of them have come up with new strategies to either minimize those challenges or to go about things differently without having folks live on the farm.

Finding a good fit. This section shows comments from farmers concerning the lessons they have learned along the way, the good examples, and good outcomes or impacts. Some of these comments are about how to best make the operation work with volunteers and interns and how farmers have been able to pay people more over time, but also from farmers that only hire paid people and do not believe in having volunteers. Some comments also deepen the understanding of how farmers first started as volunteers themselves. First this section shows at a few comments where farmers suggest strategies to make a good match volunteer and intern on their farms. Farmer Kimberly shares about the overall reality of labor on a small farm:

Here is a comment from farmer Jimmy about a basic level of motivating volunteers:

Jimmy: *"I find that the best way to keep volunteers working is to do the work with them. Showing that you are willing to do, what you tell them to do. They don't complain as much about weeding if you're sitting in the field next them…I am learning things every day too. Make it clear upfront with volunteers what expectations is and reserve the right to terminate the relationship."*

Farmer James suggest that asking about their upbringing during interviews can help selecting good volunteers:

James: *"The difference is I think is their upbringing. I ask them when I interview them, how was your relationship with your parents. And I'm going to start asking people now when I interview them how much time did you spend a day gaming. Because I am going to start weeding out the gamers."*

Farmer James estimates the cost of volunteers to a total of $1,100 per month: food $600 and room $500. He says that volunteers prefer to stay at his farm because they don't have to live in tents:

James: *"Usually WWOOFers prefer this farm over others because of the nice accommodation, and the food…they aren't not living in tents, they have a fully working kitchen and running water."*

Farmer Jimmy also shared another consideration regarding age.

Jimmy: *"Keep it at a certain age. No people under 21 years old because we're a non-profit. Sometimes we had older such as 50 years old, and it is incomparable when sharing households. Ideal age group is between 21-26. We already noticed a shift in the group when people above 30 joined the group."*

Farmer Arnold points to three important things when he was asked if he recommends volunteer labor to other farmers with a few stories to elaborate:

Arnold*: "that really depends on 2 important things, 3 important things actually. <u>One</u> them is your ability to provide useful work. You can have so many that you don't really do work for the farm. There are members of the WWOOF program on the other side of this island where they had as many as 10 and 12 WWOOFers and they just all stand around and sell bananas and its really cover operation to sell dope and in others they sit around the campfire and sing. I know this for a fact because I have a number of*

people who call me up and say can we please come and they tell me about this, I have no moral objection to smoking dope I just don't want to have anything to do with it on this farm because you attract people who want to come to Hawaii to do it and I don't want to do that so I don't care what they do in the weekends; sex and drugs and rock and roll, but I don't want it on my farm. And so the number that you choose has to do with the amount of work. The second very important thing is how many people can you house adequately. There are people who live in tents in the rain and have their showers with a garden hose but if you need people to perform quality work, you need to have quality volunteers and I have prided myself on doing that. And so the third thing is that a lot of people are not able to do is how do you effectively manage the number of young people who are volunteers, they do not get paid. So how do you motivate volunteers and how do you get along with them and how do you get work done. And in my case I have had as few as two and as many as six. So right now I have five and that is a good number for me because I can house, I have two rooms with bunk beds so that's for four people and then I have a bed, currently I have a married couple and they live in a tent with a queen bed on top of my coffee drying deck so it is covered and dry and clean and they have electricity and all of that. It's just that they don't have to share a bunk bed."

Arnold further shared that he wants the volunteers to eat well and be happy to do a good job:

Arnold: *"because I want them to eat well and I want them to be happy and if they are happy they perform better. Volunteers who are happy produce much better work than people who are not, that's always the case."*

Arnold shared with me a statement that he sends to each potential volunteer in order to set their expectations right. Farmer Jimmy, James, Sarah, Jane, and Jacob had similar made similar statements that helped them "weed out" the bad ones before they are brought to an interview or to the farm for a trial period. This is part of a statement from Arnolds farm to set potential interns expectations right:

Arnold: *"The average stay of our volunteers is between two and three months, and we will usually need to agree on firm dates up-front. Average ages is between 20 and 25 (minimum: 19), and 65% have been female... We are looking for fit and upbeat people, who are easy-going, collaborative and eager to learn, and to experience new environments and activities… We usually have between 3 and 5 farm interns here. We are not volunteers, and our operations are not hobbies. Many decisions we make here have great*

consequences, financial and otherwise… We can only accept individuals with a well-developed sense of responsibility, reliability, and honesty. I prefer Interns who have more life experience than having held down a class room seat for 12 -16 years. We want you to consider the farm your home while you are here and take initiative. We still have to sweat and fret a lot. Running a farm is a lot of real work, like in "physical labor"."

Continuing with Arnold's farm, he shares that some of the best aspects of having volunteers is that they are allies of the operation and he suggest to give them enough information before they arrive do they don't have bad surprises:

Arnold: *"I'm telling them here is what you have to expect and one of the things is, the second reason why I have WWOOFers here I want allies. I want people who have my back. I want people who say we are now on the farm of my uncle and if there is a water leak I wake him up In the middle of the night and we fix it. If I am somewhere and I have a lot of stuff to do, and my wife is behind the computer and a guest arrives I want the WWOOFers to go down and say hi, hello, here is your room and say when we will be back... Il give you an example of a 30 something year old woman who was a teacher and I said you know this is physical work and the answer was "o I'm a fourth grade teacher I chase around fourth graders all day long I'm in good shape." And after one week she said I can't handle it. It's not that I make people swing a pick axe all day long but farm labor is farm labor. So sometimes they just change their beds in the B&B and sometimes they harvest food but there occasions when they have to go and pick up rocks. The thing is you have to provide enough information so that they don't have bad surprises."*

Farmer James says that if you do the screening right, referring to having a good process of selecting volunteers and interns, they contribute economically to the farm:

James: *"If you do the screening right, volunteers can really add to the viability of small farms in Hawaii."*

In some cases volunteers and interns bring new skills to the farm such as experience with sales. Farmer James share a story about one of his volunteers:

James: *"Yes and that's a really good point that you're bringing up and I am really glad that you said that because I think it is something that could be utilized more. But one woman that comes to mind, I am not*

sure through WWOOF or Help Ex, she is from Poland [and] much older than the normal volunteer who is 22 or 23. She had run a business for 10 years having a cafe where she had been doing all kinds of sweets and other food items. So it was an eatery. So she had a very good sense of design and also she was passionate about food. And so when she was here she started doing more things. She brought more things to the market. She always wanted to try different things to sell. And on the farm she would add her touch here and there. She wasn't so much into social media, but she knew about the aesthetics of marketing and also kept really good customer relations. I would see her talking to people, when we had our farm stand, just explaining what this interesting thing is and then they would buy it. She was a good sales person, not in a pushy way but in a way that people felt good about it."

Farmer Sarah describes the difference between having the help of volunteers and not having their help for a few years on the farm:

Sarah: *"No we didn't have WWOOFers quite that soon I think we planted maybe a third of the farm before we opened that to them."*
Author: *"And did it seem to make a big difference, the day that you got WWOOFers?"*
Sarah: *"It's been huge, it really has allowed us to plant a lot more and keep them in better condition."*

Farmer Jacob shares about their experience with volunteers and that they have hosted approximately 250 volunteers over the last two and half years:
Jacob *"Our experience with WWOOFers has been really really positive. Its been wonderful. We called ourselves a 'farmily' now… We have a log book with volunteer stories. They are wonderful people and we have had such a joy learning each individual story. It goes way beyond their economic contribution of their labor. We've had over 250 volunteers these last 2,5 years. And you know sometimes we get the computer guys and we're like "hey can you make me a flyer, can you update our website, can you update our WWOOF page, can you do some editing…" you know so Tina is a writer, she can edit some of our stuff. And we learn from them too you know. We get some kids with some very bright ideas. "*

Farmer James estimates that he has had about ninety volunteers in three years on his farm:

James: *"Well I have had probably 85-90 people that have been here WWOOFers and actually they are not just WWOOFers some of the people are through HelpX."*

But a couple of farmers did not like the idea of having volunteers, interns, or people living on the farm. Those farmers were very outspoken about that. They relied only on paid employees. Here is a comment from farmer Barbara:

Barbara: *"Yeah, one employee. And she was almost full-time. So I did the rest and my husband helped. My husband has always worked full-time off the farm. So he supports the farm... And we paid our employee a good wage, we paid her above minimum wage, all of our employees. We have actually had a total of four employees. All of them were paid above minimum wage certainly. The lowest paid one was ten dollars per hour, but twelve to fifteen dollars per hour was average. And we had fantastic employees. I am still in contact with all of them."*

Finally, Farmer James describe that you cannot learn about farming in a classroom and that you have to be willing to sweat:

James: *"You make mistakes and you learn. I have friends my age who come in and they want to learn about farming they take one to three farming classes that there is all grant money for all these farming classes and all these people taking farming classes but none of them are farming. None of them are willing to sweat. It's all about you know recently I meet three different brothers my age that I haven't seen in years. And they all look really close to dying grey skin, really sick looking and I realized because they are not sweating. By 8 o clock every morning I can guarantee you my t shirt is wet. And it's not detox it's just getting that heart pumping, getting going getting all your organs turns up and strengthened. That's a beautiful thing about farming it's everything included in one activity; Healthy mind, healthy body, healthy spirit."*

Conclusion labor consideration from small farmers. This section illustrated perspectives, realities, considerations, and recommendation from small farmers about how to go about their labor needs. In general, in a small farm one person has to wear many hats, take on many roles, and be an expert of many things. They have to do this while being challenged economically to hire more people.

Most operations are also challenged to scale their production because they cannot pay new hires; meanwhile, the local demand for these products is high according to small farmers.

As we have seen in recurring themes from the comments, many farmer then rely on volunteers, interns and in some cases apprenticeships to get the work done cheaper. Some farmers see it as a model that suits them and is critical for their survival, but many farmers who want their volunteers and interns to perform at the standard of paid employees soon get disappointed. There are many challenges with teaching people who have no prior experience, which is one of the recurring themes. Sharing the farm home with other people can also affect privacy, and requires a very active farm manager to carefully select and manage on a daily basis. In some cases though, and when farmers have learned from their experience, they can attract volunteers and interns that bring new skills to the farm and contribute to the economic viability of the farm.

While most farmers view it a favorable economic set-up to operate their farms with volunteers and interns compared to paid employees, there are tangible costs involved with hosting people including cost of food, cost of housing and the transaction cost of not renting it out to someone else, the cost of stipends etc. One farmer estimate the cost of food for his volunteers to be approximately $12k annually; another farmer who regularly has 6-8 volunteer and/or interns combined estimates the cost of each to be $18k per person annually without stipends. With stipends it can cost another $10k per intern or apprentice annually. Some farmers who have worked to perfect their volunteer model have developed paid positions for interns and apprentices and utilize the volunteer program as a recruitment program for future interns, apprentices and employees. This was the case with a few farmers that I had multiple interactions with over a five to seven year period.

Farmers spend time training workers that come to the farm, this is the main reason for why they want people to stay longer so that the time spent on education is not a waste. Interns and apprentices receive a weekly stipend and often take on more responsibility on the farm compared to volunteers. However, sometimes volunteers and interns bring skills to the farm that was not there before usually in the areas of marketing, sales, computer skills, signage, but also construction and carpentry. Moreover, some farmers feel that having volunteer and intern on the farm can also result in more small farmers in the long run because some volunteers and interns become farmers. Several of the farmers were volunteers and/or interns on other farms themselves, one couple even met as volunteers on a farm, got married,

and purchased a farm in Hawaii. Farmers feel that hands-on experience on farms and experience with the many parts of a farm-to-table concept can best be received by staying and working on an active small farm rather than in the classroom. In the next section we pause to hear the perspectives and comments of volunteers and interns.

Direct marketing considerations. This next section illustrates comments and stories from farmers in regards to their perspectives and strategies of marketing. As discussed in the literature, local food systems can enhance small farmers' ability to capture a larger share of the retail food dollar through market developments whereby the farmer also takes on some form of processing, marketing, distribution, and sales. As can be seen in Chapter 3, table 3.1, most farmers engage in some form of direct-to-consumer marketing as their primary choice of marketing.

General characteristics of marketing strategy. Farmer Chester explains how he believes that small farmers have more income opportunities now compared to when he started farming in the 1980s. Chester: *"The evolution of good farmers markets, CSA's and supporting local restaurants makes farming today much more lucrative than it was when I started farming in the mid 80s. I mean there are now avenues for small organic farmers to make a living which really didn't exist [when I started]. That was always the biggest challenge was you can't just be an exclusive club for small farmers and rich people who can afford it. The intention was "why shouldn't everybody be able to eat organic foods and why shouldn't there be an infrastructure of farmers and traders that are sustainable in a way that everybody makes a living." We have to have organic and sustainable agriculture it has to reach a scale that is proportionate to the market place that it will be in."*

Kimberly who transitioned from managing a large dairy to a small dairy and creamery comments prioritizing marketing. Kimberly: *"I think the areas that we don't spend a lot of time of money in is marketing, and sales, and distribution. Like I said before, that fell on the way side. Because the amount of people we have that work here, most focus was on production. But if you can put some real focus and money on that end of the business, than production can get to the level it needs to get to make the whole business successful and thriving. And so I think at this point if there was an influx of cash. Either through a loan or a grant, I am applying for a loan right now, I think a lot of that would be put toward the end of marketing."*

Farmer Barabara explain the difference between her product and other Chevre that can be found in the super markets.
Barbara: *"Most commercial dairies, like you go to buy chev in the grocery store. It's fine, it's good. But it is commercially made. It's got a six month shelf life! A chev is a fresh cheese. Haha six month shelf*

life…so you know something isn't done right. It's also about 5 times as salty as anything that would come out of a small dairy."

Another key aspect of local food system is that demand for locally grown fruits, vegetables, meat, and other value added products is high and small farmers often experience that customers would order more if they increase production. Here is a story from farmer Calvin and Zachary. Calvin: *"Everything gets delivered within 24 hours, we sell all we grow."*

Zachary: *"There is one coffee shop, only one shop who wants to by 30 pounds every other day of my baby lettuce. I just can't produce that much. I don't have enough square footage. I don't have enough help."* Farmer Anuhea explains that she sells everything she grows at retail value. Anuhea: "*It's a waste reduction thing. Our farm the way we run right now is we have very small operation but we sell pretty much everything we grow, and we sell it all for retail value. Everything is through the CSA.*"

Farmer Zachary talks about direct sales of catfish to Chinatown, Honolulu and the high demand for it. Zachary: *"So this one lady she has her own shop in Chinatown but she is also a broker for other shops in Chinatown. So there's a couple of places like that. I sell to three different places in Chinatown. There's one that I sell my catfish to. I only need that one customer because they will take 200 pounds per week. I sell out every year. I am going to double next and next year…but I just keep running out…yeah I'm going for 2,000 pounds the first year, 4,000 pounds the next year, and I'd like to get 10,000 pounds of catfish out of this farm next year. There's a guy in Mililani going for a 100 000 pounds this year."*

Farmer Lyndon explains that he has chosen some locations for his locally grown mushrooms and that he does not grow enough to fill the demand of every market. Lyndon: *"We don't have enough mushrooms to go to every single market. So we go to a handful of farmers markets. We sell to Whole Foods, Kokua market, Foodland, Down to Earth."*

Farmer George talks about switching from conventional marketing of apples to direct marketing. George: *"Selling apples, the way it is done, there's pro's and con's to it. But they get basically twenty-five to thirty-five cents per pound for production apples that then gets sold to Safeway's and look beautiful all year. So it is going into cold storage so that they can sell it in January, March, June, and July and then the next years apple go on. Farmers get very little you know. That's the traditional model. And so now to*

try to more consistently make a profit, it is going to be more direct marketing. That's what we are changing. And so were changing to organic and some of the fruit will go to Whole Foods and some of the fruit will go to our farmers markets. So it's a bit like figuring out how to not have fruit go to waste. And what to do with the fruit that usually don't get sold which we will juice it. But then you got to get enough money for the fruit to juice it so that it is worth picking it. You got to pay people. That's what is complicated."

Farmer Abraham speaks to the needs to diversity farm production when doing CSA and farmers markets. Abraham: *"…so doing it organically is kind of difficult and then just finding your market you know what grows well where you are and how to market things you know whether you are going to go through the farmers markets and the CSA whether you're going to go with the restaurants or go for working with a food distributor which we haven't done. So you know we are doing everything basically the old time truck farmers so you grow everything and you deliver it and you know gas is expensive , it takes time all of that. When I started I tried to grow as many things as possible just be very diversified and doing things with the chickens and the hens and all of that stuff and I still somewhat committed to that I mean partially if you're doing a CSA program or a farmer market you need to have a little bit of diversity for people but it's hard to do a whole variety of things because they are all sort of different growing rates, nutrient needs, watering schedules so all of that stuff makes it hard to do a whole variety of different things."*

Farmer Kimberly comments about operating with few people and incorporating direct marketing to gain the full retail value.Kimberly: *"Another way is that when you have such few people, to market you can look at distribution companies. I think a lot of vegetable farmers probably utilize that but your get a middle man so you get less of the money. But that's definitely a way for you to be out of the marketing and handling sales and just focus on the farming part of it. We looked into distribution channels, we're still looking into it, and it is a definite possibility for us in the near future. You know doing the marketing ourselves takes a little bit more man-power than we have, so we only do some part-time marketing and sales. Re distribution: we do the deliveries ourselves to save money, but we might be looking into a distributer to not only market but also distribute our products. That's a possibility. And I am trying to think…and the other ways that farmers have found to market their products if they're not big enough to go to stores or go to distribution is farmers markets. So you can go and take your product straight to the farmers markets and sell it directly to the consumers. So that is a few ways that marketing can happen."*

Some farmers think of the government as a middle man. Here is a comment from farmer Zachary about doing business in cash. Zachary: *"Mhmm... cash is king, you can leave the man out of it you know. For us, six bucks cash is like a nine dollar check…"*

Farmer Lyndon speaks about on spreading the risk among several markets. Lyndon: "*You have to do everything. Because if you go to one market, what if that market has bad weather? You want to spread your risk out thin. So if you sell to Whole Foods. What if you sell them too much and now they become a dictator of your price? So you want to avoid that. You don't want to sell to one big customer and they take the majority of your product. That way you become the employee."*

Farmer Sarah explains the outlets for their locally made value-added product. Sarah: "*…we sell it directly on an online store, we sell it at farmers markets and wholesale accounts are tea shops, gift shops, restaurants and mostly local because it has so much value as a local product I really haven't spent a lot of time or needed to spend a lot of time or attention getting it off the Island. But there are a few places both on the mainland and Oahu.*"

Farmer George describes his main customers and his preferences for marketing his value-added products in stores that support local and small farmers. George: *"Well we started at the farmers market last fall just introducing it. And now locally on different retail places on the island and we've also been accepted to Whole Foods. So were going to go there…right now we don't have our own commercial kitchen we have to rent. And we don't have someone like an employee making it. My daughter and I are making it. So that's what we are doing summer time. Yeah and then there's a co-op store that support organic and local farmers… that's kind of the niche that we want to get into like Whole Foods or markets that sort of support local farmers."*

***Types of direct marketing- CSA*.** As we can gather from the comments, there are several types of marketing that is preferred by small farmers in Hawaii and that primarily rely on direct-sales. The main forms of direct marketing are farmers market, CSA, sale to restaurants, and direct purchase from the farmer from a farm-stand, store or during a farm tour. Farmer Gerald describes his CSA operation. Gerald: *"We sell through a CSA we sell eggs, ginger, turmeric, lettuce, avocado, oranges, and that kind of like a buying club style so each week the people that are members write in an email and say I would like*

this much this week…Yea it's not just a CSA share that's standard, we wanted to do that we want to customize it for people because that's like ginger and kumera for instance you don't necessary go through the same amount so."

Farmer Richard described his CSA operation. Richard: *"… our average CSA was $100 a month and you got a box of vegetables, herbs and stuff that's sort of the base line…once a week. So they got so depending on the month usually 4 boxes for $25 a box, sometimes we would get 5 in one month. So that was the base and then if you wanted eggs you know that was another $8 for a dozen organic eggs and we bought in organically, you wanted milk, if you wanted to have a milk subscription that was another bit you know so meat we sold assortments of meat at 25 pound mix cut of meat for $200-$250 organic meat. At tops I had about 50 [CSA customers]. I ran it more in the 30-35 range. Again what can we sustain, we only had an acre and a half to 2 acres that we had fenced and feral pigs on that we grew vegetables in and that was kind of the scale of our farm so I mean I've got friends who grow for hundreds of people on the mainland. They lease acres here, they have got there farm there and they power out they got 14-16 hour days of sunlight in the summer, we are so close to the equator the summer days are just an hour or 2 longer than the winter days right and so they can grow that reaches the ceiling, our corn is lucky if it gets this high. It's not just soil, it's daylight too, but anyways so 30 to 35 customers so you are looking at you know $3,000-$4,000 a month in revenue off of that we now are turning and putting a thousand of that into the WWOOFing program."*

Farmer Abraham describes his CSA program and having people on the waiting list. Abraham: *"Yea we have a small CSA program we got about 20 people some of them come out here to the farm, some are in town. We sell to whole foods, we sell to some restaurants, we go to the farmers market…There are people that contact me regularly to be on our CSA list. I'm sure it must be frustrating for them because I have not put them up. We don't have the capacity. Again we are lacking in our production. The CSA would be the very top way of selling our produce when picked-up here at the farm. Because we know how many people are going to be coming. We can harvest for them ahead of time and just leave it here in the cooler and they just pick it up themselves. We don't have to go anywhere with it. It's by far the best possible way of marketing our produce. And we haven't done anything to expand that program because of our production challenges."*

***Types of direct marketing- Tours, B&B, and farm-to-table events*.** As we will see, for many farmers agri-tourism and farm tours is an important educational aspect that intersects with many other

forms of direct sales. I have heard farmers preferring tours and commenting that it is like *bringing the farmers market home to the farm.* One way to bring the farmers markets home, so to speak, is the establishment of a café that supports the farm by making meals for customers that are mainly sources from the farm. As farmer Jimmy mentioned, they brought tourist to the farm and generated a revenue from the tour, from selling meals, and from selling value-added product and other tourist items at their farm store.

Farmer James comments about his farm-to-table café and that it supports other small farmers. James: *"Everything comes here now, everything from the farm is brought here. And we buy pretty much all our stuff from small farmers. This café supports local agriculture more than any other café…I hardly can believe that we are a farm-to-table. In the United States there are not that many farm-to-table [operations]. And really, economically it is the only way to really do it."*

Furthermore, with the farm as a learning center, some farmers turned the farm into summer camp during the summer months. Here is a comment from farmer Richard.Richard: *"There was a fee they paid, a couple hundred dollars a month so their kids could come to the farm. Then we ran a summer camp which was really where we made a fair amount of money for 6 weeks. We had kids from all over not just here but other schools, they paid $150 to $200 a week for their kids to come and spend the day to 5 days on our farm and we did. My wive is a school teacher like I said she developed that school program where they would work and harvest food and bake it, bake bread and cook stuff and make candles and can things and make jams and jellies. And then we would set up sprinklers and they could have water play in the water and hiking in the woods, so it exposure to different things and the kids had a blast, we always filled our program...We ran it at about 30 kids. So that was another, let's say it $150 average, $4,000-$5,000 on that and then like I said she hired some help."*

Special DTC Events. What follows are some direct-sale farmers' comments about markets that are unconventional even for these small farmers. Farmer Zachary shares about marketing for people's birthdays and on craigslist. Zachary: *"Yeah…but we've been lucky I have say half dozen Pilipino families…I mean they're big families…like one birthday party is 700 people…there's always somebody having a birthday, a wedding, New Years, Thanksgiving…you know there's always something going on. So now I am pretty much sold out of catfish already…these Filipino's that I'm selling to are not like my childhood friends or anything…actually it was just from craigslist they discovered we're selling catfish*

fingerlings…they call me up and said "oh…you selling grow up fish too" and then they tell all their friends and family that "oh…I got the hook-up" because they can come to me and get it for $6 per pound or they can go to Chinatown and get it for $10 per pound….and then they're like "we'll drive to Waimanalo"."

Farmer Kimberly tells the story of what started as her idea of getting people with federal SNAP (EBT) i.e. food stamps, to purchase more of the fresh food at farmers markets. Kimberly: *"We came up with the idea after seeing Kanu Hawaii done in Honolulu that we had participated in and it was successful because we really sold a lot of butter. We're the only butter producer. So it was kind of exciting…and we do the farmers market in Waianae because that is our backyard, that is our community. But it is usually really slow, it doesn't bring in a lot of money, not a lot of people come to it. We don't sell a lot of product there because…we just felt like we needed to bring more awareness to the market in Waianae. We felt that if more people from Waianae could go to the market than all off the farmers that are spending their whole Saturday at the market can benefit. Our goal was really to make more money. Bringing more people to the market in turn makes us more money. So the question was how do we bring the awareness to the market?*

If we do an Eat Local Challenge, we can accomplish a couple of things. We can more people to come to the market. We can get more people from Waianae to more healthy food because now they are coming to the market and buy vegetables and our products…and we're just bringing more awareness in general. Most of the farmers from our neighborhood participated. Mostly local farmers from Waianae… and basically we offered incentives for people. Our first challenge was to get people to the market. So once we get the people to the market we know they are going to buy product. So we got sponsors to donate prices to get people to the market. Once they got prices like a t-shirt or a hat for free, then they would spend some money at the farmers market. And then their incentive was to not only spend money at the food vendors and not the craft stuff but to spend money and to buy healthy food from the farmers themselves. So they got rewarded each time they spend 5 dollars at a farmer's booth…

They had a card that got stamped. After 10 or 15 stamps, then the cards got put into a box for drawing. This went on for 6 weeks before the winners of the prices were announced. So for 6 weeks we drew attention and gave incentives for people to come to the markets. For those 6 weeks, it was really successful. A lot of people came, they participated in the stamp card challenge, and the people who had never been to the market before thought that was just the greatest thing.

And then at the end of 6 weeks the winners were drawn and won several prices. We gave away a cheese class and a small chicken-farm house and others gave away plants, and then an IPAD was the grand price donated. So that was very successful. And there was a residual effect. The people who found out about the market keeps coming to the market now. So that was the residual effect. So that was good. Mission accomplished!"

Special events like the ones mentioned by Kimberly and also Zachary such as an Eat Local Challenge, Thanksgiving, and New Year celebration often make a big impact on small farmers. In Hawaii there are many events around the year, for local as well as non-local tourist, when they increase purchases of locally grown foods. Other special events for farmers on the island of Oahu include The Hawaii Food and Wine Festival, the Made in Hawaii Festival, Jack Johnson and Kokua Hawaii Foundation's Kokua Festival, Eat the Street events, Parade of Farms, and many more events. The events are similar to a farmers market and often include farmers who participate in farmers markets.

Finally, for describing marketing activities, compared to the U.S. mainland there is one aspect of on-farm marketing that has not quite become popular in Hawaii yet. Here is a comment from farmers Laura and George from Whidbey Island about U-pick marketing. Laura: "*We do U-Pick as more of a service to the community and there is some work with it because we have to keep it separate from where we want to pick*."
George: "*It's part of building the reputation and the identity of the farm....Yeah and part of why we do it is for families*."

***Marketing consideration of small farmers*.** No single marketing solution works for everybody, and many of the farmers have their own preferences whether serving customer in the farmers markets, on craigslist, or on the farm. However, many of the farmers have learned something about their marketing decision over the years and attempted to make it better. Here are some direct marketing challenges and considerations from the farmers.

Farmer Kimberly explains how farmers markets are useful for educational purposes and building consumer relationships but the revenue from them compares once factoring in all the expenses compare to wholesale prices. Kimberly: "*I think it depends on the farm and the type of product. I think*

that a vegetable farmer or mango farmer can go directly to the market and sell 400 mangoes and it'll be well worth it skipping the middle man. For him to go directly to the consumer, sell his mangoes and pay his costs, and still make a profit. For our particular product at farmers markets, they're kind of a catch 22. They're very useful in that allow us to talk to our consumers directly. They allow us to educate our consumers on who we are and what we do. And it is a good avenue for getting the word out, for branding, and getting our name out in public. As for being profitable, they're not as profitable…we calculate our cost with the time, and the gas, cost of setup, and whatever else it is coming out to somewhere compared to our wholesale prices. So we don't do the volumes that say a vegetable farmer would do. We sell not as many items because we have fewer items at a higher price. We don't sell as much volume wise."

Farmers Zachary explain his views of the farmers markets and the importance of bringing enough produce. Zachary: "*For us the markets are totally worth it if we can bring enough stuff. Production is a major issue. The good news is that the market is there. If we had enough product we could be making a thousand dollars per market each day. So we could make 8000 on farmers markets if we had enough kale, lettuce, watercress*."

Farmer Zachary talks about having volunteers at farmers market and the need to bring more produce to the markets as he keeps selling out. Zachary: "*Yeah so she did the market this morning. He is going to do it tomorrow. I work the markets sometimes with the volunteers. Some volunteers sell better than others. Like Jenny puts on her little short jean shorts and she sold out by 10.30am…hahaha so I am like just keep wearing those shorts, you're doing great. But again, we're usually selling out. We need to bring more*."

Farmer Kimberly gives a few suggestions on how to think about marketing. Kimberly: "*Well yes. Marketing comes with a few considerations. How do you price your product to stay competitive in the marketplace? That's number one. Number two, how do you actually market your product? How do you get people excited about wanting to buy your product? How do you get businesses to order your product? So those are the two ways that I look at marketing*."

Farmer George explains about pricing of value-added products while marketing to Whole Foods and considering the competition. George: "*It's actually a little bit more than that. It's like 30% that they take. I can show you my economics. When we were invited to present at Whole Foods I put together a table of*

prices and products and showed what our whole sale price would be. So they will mark it up however they mark it up. So we're both working backwards and forwards. So like, what was the cost of production? We have a pretty good estimate of that. And then just knowing what sort of comparable bars are like. And so anyway they accepted it. So this year, on all of our pricing, we're going to be making an adjustment this year and next year. Being completely new we're going with what the opportunity was and not the cost."

Kimberly speaks to pricing value-added products in Hawaii and affording to pay people. Kimberly: "*Going to back to how do you price your product to be competitive? You know, doing business in Hawaii I think that is tough for any small farm. And a lot of time small farmers end up not valuing their own time, and you end up either not paying yourself or you just don't account for your valuable time. And so that gets eliminated from your price point. So to keep your prices competitive, and what I have done is basically undervalued my time to keep my prices competitive. I have been told that this is not a good thing to do. Well a lot of business people tell you that you have to pay yourself. You have to make sure you pay your employees. And pay them what they are worth. That's true. But when you're a small business before you get to the point where you can pay people, you know that is a very hard thing to do. I think a lot of farmers will tend to not pay themselves first and make sure they pay their employees, or pay their bills, or pay other things. So that was a lesson learned.*"

George from Whidbey Island talks about finding the stores and customers that best align with small farmer's needs. George: "*And so it's kind of like, for farmers like us, and lots of people in the small sustainable movement, it's trying to help being part of educating those customers, you know, the cost of food not just…so I don't know whether this is true, but we just got accepted to be in Whole Foods but… I'm beginning to gather that Whole Foods as an organization is most attuned to what their customers need and not what farmers need. And so Laura…we first started selling fruit at Skagit Valley Co-Op, and that was the organization that basically offered us the best competitive price for our fruit*."

Organic certification. Most of the farmers spoke about growing food organically, but not all of them were certified. Farmer Lyndon, Arnold, and James talk about the challenge of organic certification mainly the paperwork required but also about neighboring farmers who are not organic and that the public doesn't seem to care. Lyndon: "*Yes. Many licenses and many many requirements we have to fill. Workers comp., we have TDI, permit to import, permit to sell, we have like a permit for the scale…we*

have everything. I also have organic certification, and I have had food safety certification but I let it expire because nobody seems to even care."

Arnold: "*Then there are challenges of owning a coffee farm and then the state that does everything so there are a whole bunch of challenges there. But in addition, the ones that are specific to organic is first of all there is a significant amount of paper work and when you first start out you know I started out and the first time I have 5 inches of paper work and all of these forms I think there were 35 different forms, and most or all of them a couple of pages and it's just an enormous amount of paperwork that you have to submit. And of course it forces to be to some extent systematic and keep historic records and stuff like that but it is a huge challenge and every organic farmer pisses and moans about it when certification time comes around. I had a neighbor who had easement along my farm and the farm itself was far away and he was spraying weed killer there you know I had to write a couple of letters saying you just have a easement on the concrete and nothing else and I'm an organic farmer please don't spray and it took a while until that took on. So those are the challenges of paper and the challengers of boundaries*."

James: "*We're not doing that anymore. It's too much government control. The moment the government got their hands on it we knew that it was not going to be good. It has created a situation where you need an account/ lawyer. The only people that can be certified now are only big farms. And that is not organic farming. You have these farmers in the mainland that are organically certified they are industrial farms. Most states have now started their own certification. I always felt that it should be left up to the community and the integrity of the community to hold people accountable. It takes months and months and months to put together the paperwork. Nothing makes any sense, pure bureaucracy...*"

James: *"…see we are certified organic. What a nightmare that is. 30 years and that all started and I fought it I was one of the few people that fought it, I knew that when the US government gets to be the guy who calls organic organic and how to certify that would be a nightmare. And basically, you have got to be a book keeper. You get punished for being an organic farmer. You could not spray any deadly chemicals on your food and you have to keep no record on it. But to be an organic farmer you have to keep a daily record of everything you buy, where you buy it and when you use it. It's a drag*."
Abraham makes the point that the organic certification becomes more valuable when marketing to stores because they pay better. Abraham: "*Yea I mean not including the paper work, you throw the paper work in there. But we may go back and be certified so that we can go to more markets like down*

to Earth, they want to see that you are certified organic to be able to sell it as organic and so we would get paid a little bit more from them I'm not sure that they would take it if we weren't organic. Even if they take non organic, I mean that they definitely pay more for the organic and so if we are going start doing more volume to them it may end up being because we are organic anyway I mean we are not doing any more practices it's just we would have to do all the paper work."

Farmer Kimberly and I have a discussion about economies of scale, high prices and affordability of product, and the reality of small farming. Kimberly: "*Yeah. I think that is the difference between a small business and large business. Now you do get into economies of scale because…you know we run a small business and for our expenses to make sense we have to produce a lot. And that's the challenge for a small business, I mean you are small so you can't produce very much. Can you produce enough to take care of those expenses…and in our original business plan I did account for that being able to produce enough. We haven't reached that goal yet, and we're still working on it. But I think that is always going to be a challenge when you're small. How much do you need to produce? Can you produce enough to cover your expenses comfortably? And that's why we talked about diversifying...so maybe we can't produce enough cheese to cover our expense but we have this other source of income which is tours which is right in line with what we're doing, that's going to help us cover these expenses. So yeah…I think that is challenging in Hawaii and that's why the price of your final product is so high to. You're calculating in all of your expenses, overhead, and… not only is the cost of your raw product is higher, but your costs are also higher. At the end, you just have a higher cost product and that requires you to be more creative in marketing for sure…*"

Author: "*Is there a way you think to make all people afford a product that is made in a sustainable small farm?*"

Kimberly: "*Yeah…that's a good question. I mean I have been struggling with that question from day one. Like the key to our success is how much cheese can we sell? So at certain price you can sell this amount of cheese, and then at a lower price, you sell more cheese, and then even lower price you can sell even more, and at rock-bottom price you can sell as much cheese as you can possibly produce. Where do you fit in that scenario? That is what you have to determine. How can you keep your cost down enough so that you can put yourself somewhere in that scenario where… you're not quite the highest priced in the market, but you're not the lowest priced either. So you got to find that sweet spot in the middle. I don't*

think we have found it quite yet because our production level is so low. We need to increase our production to the level where we can get our prices down. Because if we're selling more, we can make more, even at lower prices. I think that is our challenge right now, how can we increase our production to decrease our prices and get a bigger share of that market."

Farmer Zachary explain that local Universities and restaurant can be an ally especially to educate customers and linking chefs with small farmers. Zachary: "*Yes that's the problem is that the market gets flooded. There's only a few stores that want Tilapia. They can pull…you know they're selling it for $10 pound…there's only so much of that to go around. But there's initiatives through you know Universities like HPU and UH where they are linking chef with farms you know to sample the Tilapia, put it out there, kind of do a PR push for Tilapia because we need it right…because we still have this stigma in Hawaii that it is a Pilipino muddy fish with an off taste…and you know if you don't purge them right then they do taste a little bit off. You gotta clean them out, and don't feed them for three days and then you can harvest them…but so there's some initiatives like that…so the market will grow …*"

<u>Value-added product development:</u> Some small farmers are making value-added products. Here is a description of the value-added products that farmer Kimberly makes and how they are different from products that is made with additives. Kimberly: "*There is lots of different creative ways that local farmers are selling their products. Number one, they take a regular product such as kale and turn it into something special. Now you've turn that kale that you'd make a couple of pennies on into a value-added product that you can make dollars on. So there's those ways to make your product more special. So we take our milk and turn it into cheese, so were already specializing into something. We can take it one step further and make it into a food or something…but we don't do that right now. That is one way to market your product*."

Kimberly: *"...we make cheese. Artisan style cheese in small batches. We make butter that is all hand churned butter. Our products are all from grass-fed dairy cows. So we try to let people know that this is an all-natural process. We don't add any specific preservatives, or anything to our products that you would find in commercial products. We don't add food colorings, we don't add preservatives, stabilizers, we don't add things to make our products thicker, and we don't add any of that. All of our stuff is as natural as it can be. So butter, cheese, yogurt...buttermilk, Greek yogurt, hopefully soon ice-cream…we*

have tours, we have wine and cheese events, and we have special events if people want to book special events."

In this next conversation farmers George and Laura describes their value added product to survive as a business. Laura: "*well that is why we are adding the value-added product. And for this size farm which is really quite small, too small, you have to do something like that because you're not going to survive on four to five thousand bushes unless you add something…so we have jam and we have syrups. But those are not the big things. The big things is that our daughter Hanna experimented with quinoa and created this bar. Its quinoa, the blueberries, the ginger, and the honey that is all grown on our farm. And then it also has gluten-free oats and sesame seeds and other stuff. So that's gonna be our big thing.*"

George: "*So there are two flavors. That one there has got ginger. We're trying to get more productive with ginger. And so anyway this product we're just updating the labels and we're going to put it in a box with a display pop-up. We've just been invited to sell it at Whole Foods market. And so we're going to start there selling our spread which is low-sugar jam, our syrups and these bars*."

***Conclusion Direct Marketing*.** This section described and discussed marketing practices of small farmers in Hawaii that primarily rely on the local direct markets for their income. Farmer utilize a whole range of direct marketing including farmers markets, CSA, farm-to-table café's, on-farm sales and tours, as well as B&B operations and summer camp. Small farmers experience a high demand for local produce and farm products and often say that they sell-out and that their customers want more, want them to expand operations.

There are many popular farmers markets in Hawaii and a survey of Oahu's markets shows that farmers make up a small fraction of the overall vendors. However, many people feel that a diversity of food and craft vendor add to the markets. Farmers markets are also popular with Hawaii's international and domestic tourists. While farmers have experienced some decline in revenues made from markets, and some suggest that when incorporating all the costs, farmers markets are no different than wholesale, many are interest in "*bringing the market home*" so to speak. Instead of attending farmers markets, farmers want to bring the customers home for farm tours, for overnight stay, for farm fresh meals in the café, and also to sell their farm produce and products. Many farmers view agricultural tourism as an extension of what they already do in terms of educating the public about how food in produced and

how farming is done. In this process of inviting the consumer to the farm, sometimes farmers face challenges with neighbors and a shared gate who do not want the public to access the farm. But many of the farmers agree that if enough people do come to the farm and purchase directly from the farmers that is more worthwhile than going to a market or having to deliver to customers.

Many of the farmers that rely on farmers markets, CSA, farm sales and other direct marketing methods do not want to officially do organic certification even though they produce food organically. That is because the extensive paperwork associated with the certification process. Some farmers feel that the public does not care. In my own experience it is more common that people care when they purchase food in the store compared to through direct-sales. Some are considering going back to the organic certification once they produce more food and primarily market it to grocery stores.

Pricing is another important consideration. Some farmers feel that they have to demand a high price of their products realizing that it can only be sustained at low production levels. Farmers get a better price for what they grown when they successfully develop value-added products with a local edge. But as farmer develop these product there are more rules and requirements that they have to comply with which not everyone wants to do. In the next section we continue to look at the realities facing Hawaii's farmers with a focus on organizing labor.

Appendices 4

HFUU 2018 Survey Membership Priorities.

Survey question:

20. Which is the single most important item from the previous question? (*n*=78, CI=11)

Explanation: In the beginning of the survey members were given multiple statements and asked whether they strongly agree, agree, are neutral, disagree, or strongly disagree. After that question members were asked to write a short explanation of which item they thought was the most important. A total of seventy-eight comments were given and organized into themes.

The strongest theme was concerned with *Living on farms* and second most important theme was *food hub and marketing* and third was political and legislative focus (see graph above HFUU member priorities). Figure 8.10 shows the themes for HFUU survey respondents priorities.

Priority 1- Living on Farms. State and county zoning and codes, farm dwelling, farm labor retention 24% of members

Comment 1- Whether you own your land or lease it, the cost of starting and running a farm while paying Hawaii rent prices for an additional living space is prohibitive and crippling to the average young beginning farmer

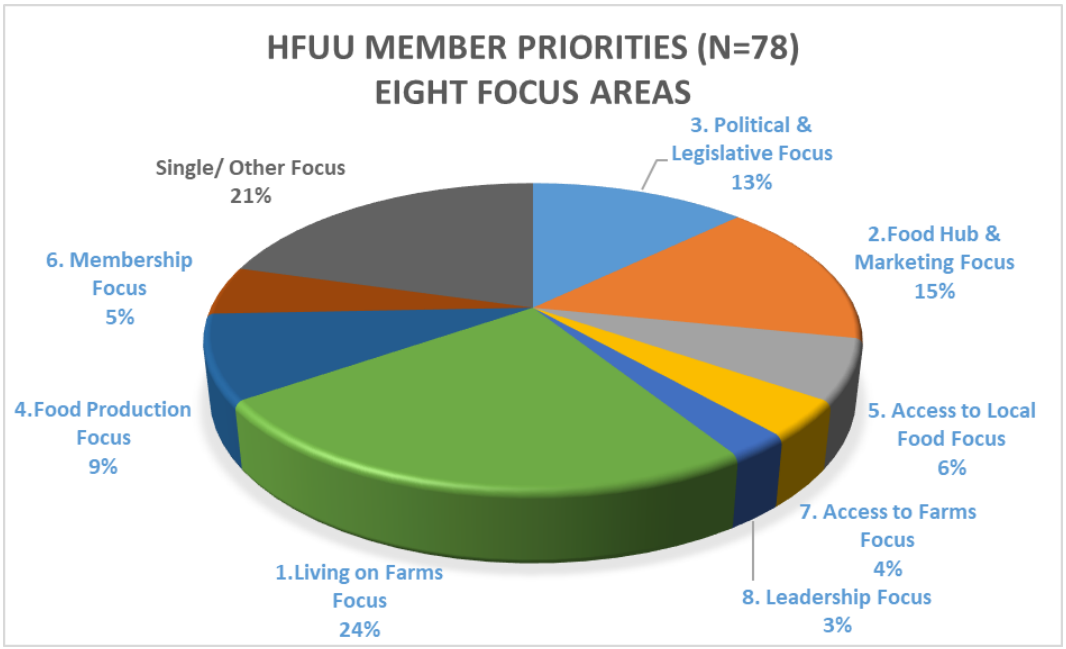


Figure 8.10 HFUU Member Priorities

Comment 2- Farm worker housing, legalizing farming on ag lands and housing. Need housing that is not so costly, such as current permitting and building code fees

Comment 3- The intersection of the high cost of housing and zoning laws limiting the ability to provide housing for farmers and their laborers creates a huge hurdle for me to plan a functioning farm plan. Perhaps a survey of how many workers are required per acre of existing farms organized by size and what is allowed by zoning would highlight that the formula should be modified to both limit abuse and encourage people to live where they are working

Comment 4- Farming is very hands on and requires an intense time commitment living on my farm gives me the opportunity to offer more time and dedication than having to travel to my farm day and night.

Comment 5- Farm housing so that we can attract and help train true farm workers that can live in dignity rather than be reliant on a revolving stream of woofers.

Comment 6- From what I have been told on island we have such a bad problem with homelessness and drug abuse that many people are stealing food from trees to make money that is why it is important for farmers to live where they grow their food so they can ward off any intruders also with climate change we need to be close by to help our crops out as necessary.

Comment 7- Being on the job 24/7 makes for a more responsible owner. It gives for more pride and kuliana in the product they produce.

Comment 8- Farmers live on the Farm!!

Comment 9- Farmers living on the land they farm. Especially with a farm that is a diversified integrated operation, requiring a farmer to manage a whole system from soil building to crop rotations and being able to monitor, hone and manage at any time of day the function of the operation.

Comment 10- Organic/small/regenerative farmers should be able to live on the land they are farming in ECOVILLAGES

Priority 2- Food hub and marketing. Food hub, marketing, certifications, value-added production, certified kitchen, sales- 16% of membership

Comment 1- I think having some sort of organized group that I can go to for helping me find customers would be really great, and I'd be open to paying HFUU for those connections.

Comment 2- I feel we need to expand the smaller micro farms involvement in the food chain on the Islands. These might be defined as those on 3 acres or less that want to participate at the farmer's

markets or co-ops. This would boost the total locally available food products and help to decrease our reliance on the domestic and foreign supply boats.
Comment 3- I would love to hear more about/participate in discussions around a Farmers Union marketing hub that would help with processing, distribution, and branding. North Shore EVP laying the groundwork for a food hub on Oahu by providing Group GAP food safety certification training. GAP certification is one of the biggest hurdles to getting aggregated quantities of local produce into larger distribution chains (schools, hospitals, hotels, etc.).
Comment 4- Farmers hub to help with processing, distribution and branding.
Comment 5- I think there is a real opportunity for farmers to come together around decentralized food hubs and marketing hubs. I'm not talking about a single hub in an area, I'm talking about food hubs in our communities. The farmers from each community coming together in that community, not traveling to a farmers' market or food hub 25 miles away…
Comment 6- The idea of a FU marketing hub has strong appeal, but I would want to retain some identity for my produce and value-added foods within it! Our biggest constraint right now is the prohibitive cost of the requirement to use a commercial kitchen if we are to legally sell our fermented foods, chocolate, and eggs at our local farmers' market
Comment 7- Assisting members to generate more on farm income from sales ought to be a strategy item for HFUU
Comment 8- We can use help getting our packaging/labeling and marketing down, including value-added and an access to a certified kitchen.

Priority 3- Political Power. Legislative representation, power in numbers, national charter- 2 to 24% of members
Comment 1-The power & strength of a United group comes from the power of influence from the numbers of represented members. It's that power that can help to influence crucial political allies to fight for us, to help our cause to become successful farmers who are willing to work so hard every day to produce the best regenerative, nutrient dense yet delicious food to feed ourselves & others.
Comment 2- I value the legislative updates for me to comment on that I receive from HFUU. Having to choose one, I'd say this one because therein lies our power as a statewide and nationally chartered organization of farmers. Our numbers, when committed to legislation by commenting on the value of a bill benefitting ag, can make change in a very real way for Hawaii.
Comment 3- Notices about upcoming legislation & the simplicity of testifying on line

Comment 4- I believe the government on all levels (local, state and federal) should be doing much more to enhance the future of regenerative agriculture in all scope and especially address the economic needs of the small farmer so that they can focus entirely on producing REAL food

Priority 4- Regenerative Food Production. Regenerative Practices, Soil Health, Human Health, Food Production Skills- not statistically significant

Comment 1- Feeding the soil should be our number one objective; everything else comes from this.

Comment 2- I would like to see inclusion of a much broader set of practices and solutions, especially things that are no or low-cost, as well as a stronger focus on the fallow. County and State land agencies need to have a better understanding of this critical part of farming. Fallow lands are also typically not considered as "in ag" by the real property tax office and small farms can sometimes end up be taxed for fallow portions at a higher residential rate. Active and passive fallow lands are not 'abandoned' and some lands need a long fallow (years) to get rid of toxins and rebuild nutrients. Public perception also sees such lands as 'under utilized' which leaves them vulnerable to the sway of development. HFUU could help increase public and agency awareness there.

Comment 3- I just love to grow trees and plants and work the soil

Comment 4- Personally regenerative agriculture is the most important thing on the list. It is what we are all about. Our farm has never been in the black due to this and therefore we must have an outside income. Regardless, we are preparing ahead long-term, hopefully for generations and are willing to make the sacrifice in spite of the fact that we are on a State ag. lease. We do not enjoy being jerked around by the State but it was the only way farming would happen for us.

Comment 5- My only motivation for attending the monthly meetings is to learn and improve my ability to GROW VEGETABLES....and fruit.. I suggest each meeting pick a popular vegetable like tomatoes or lettuce or fruit like papayas or bananas and have an EXPERIENCED KNOWLEDGEABLE person lead a discussion on best methods end related ideas about that vegetable. Everyone should be able to speak about their best methods and failures and have the group suggest helpful insights. I have spoken with other serious growers and they feel the same way

Membership Challenges.

Survey question:

18. Do you need more of any of the following to help sell a food/food product? (*n*=131, CI=8).

Explanation: Members feel that their biggest challenges are labor and time. Twenty seven HFUU members need labor help and 27% need more time in order to help sell a product.

Figure 8.11- Additional Help to Sell A Product

HFUU Food Hubs Open Letter to State

Hawai'i Farmers Union United
An Open Letter to the State of Hawai'i

6/25/2019

Senate President Ron Kouchi said this when he opened the 2019 legislative session:

> *I am most passionate about a program the former lieutenant governor started, which is Farm to School... we sourced products from local farmers and ranchers...it's my desire to see our children who are going to school have the proper meal so that they can maximize and perform at their best...it should be something that they enjoy eating, something that will nurture their minds and bodies to have them perform at their optimum levels.*

As Hawai'i State institutions strive to increase procurement of local food, it is imperative that procedures, programs, and infrastructure be developed to enable all of Hawai'i's farmers to participate in this tremendous opportunity.

The members of Hawai'i Farmers Union United (HFUU) operate several community-based cooperatives and food hubs - defined by the USDA as "a centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products." HFUU represents approximately 1,000 family farmers in Hawai'i, which comprise about a third of producers who supply our local food for local consumption.

HFUU and its members are aligned with the state's vision for increased food security and agricultural self-sufficiency. We therefore support institutional purchasing from local food hubs and agricultural cooperatives - who represent a large portion of Hawai'i's producers currently supplying state markets. Linking local farms to institutions not only builds our collective capacity for food production, but connects our communities with the 'āina (land), improves public health, develops an educated agricultural workforce, and enriches the local food system and environment. Successful farm-to-state programs have potential to drive increased food production, fueling the evolution of our local farming sector to one of thriving small businesses generating commercial, food safe volumes while building our communities' capacity to create jobs and strengthen their resilience.

CEO
Maureen Datta

General Manager
Dana Shapiro

Executive Director
Rob Barreca

Farm Director
Christian Zuckerman

Executive Director
Dash Kuhr

HFUU urges the State to take actions to reach these goals, as follows:

1. Establishment of a multi-stakeholder task force under the Lieutenant Governor's office to advance institutional food procurement with key partners including HI DOE's 'Āina Pono, Hawai'i Department of Agriculture, Hawai'i Department of Health, other state procurement offices, distributors, and groups that advocate for family farmers; this task force would develop a framework to address:
   a. Increased regional sourcing of local food through food hubs, cooperatives and family farmers.
   b. Mechanisms to promote binding contracts with producers and ensure timely payments for local food acquired by the State.
   c. Purchases directly from family farmers and food hubs as these dollars multiply in the community and lead to more economic, social, and environmental benefits.
   d. A clear and flexible bureaucratic structure and interface for exclusively-local food operators.
2. Funding means to support critical infrastructure to grow food hubs on every island, including:
   a. Construction of food safety qualified facilities to include aggregation, washing, minimal processing, packaging, cold storage, and other value-added facilities.
   b. Provision of technical assistance to help develop internal capacity to supply state institutions and other markets.

HFUU encourages the State of Hawai'i to enact long-term solutions to ensure good food for Hawai'i's public institutions and fair representation for food hubs and cooperatives.

HAWAII FARMERS UNION UNITED

Vincent Mina, President

Dash Kuhr
HFUU Legislative Chair

Saleh Azizi
HFUU Policy Chair

The Hawaii Farmers Union United and its Chapters is a nonprofit corporation formed under Hawaii law. It advocates for the sovereign right of farmers to create and sustain vibrant and prosperous agricultural communities for the benefit of all Hawaii through cooperation, education and legislation.

Appendices 5

NFU Special Order of Business 2019 on Family Farming and labor
https://nfu.org/2019/03/05/nfu-concludes-117th-anniversary-convention/

National Farmers Union

FAMILY FARMING AND FARM LABOR
2019 SPECIAL ORDER OF BUSINESS

Today, many of our nation's farmers face a daily struggle to identify enough available, qualified, and eligible workers. The lack of available labor costs American farmers and ranchers billions of dollars each year that threatens farm viability and consumer access to affordable, domestically-produced food. Congress and the Administration must act to resolve the current labor crisis.

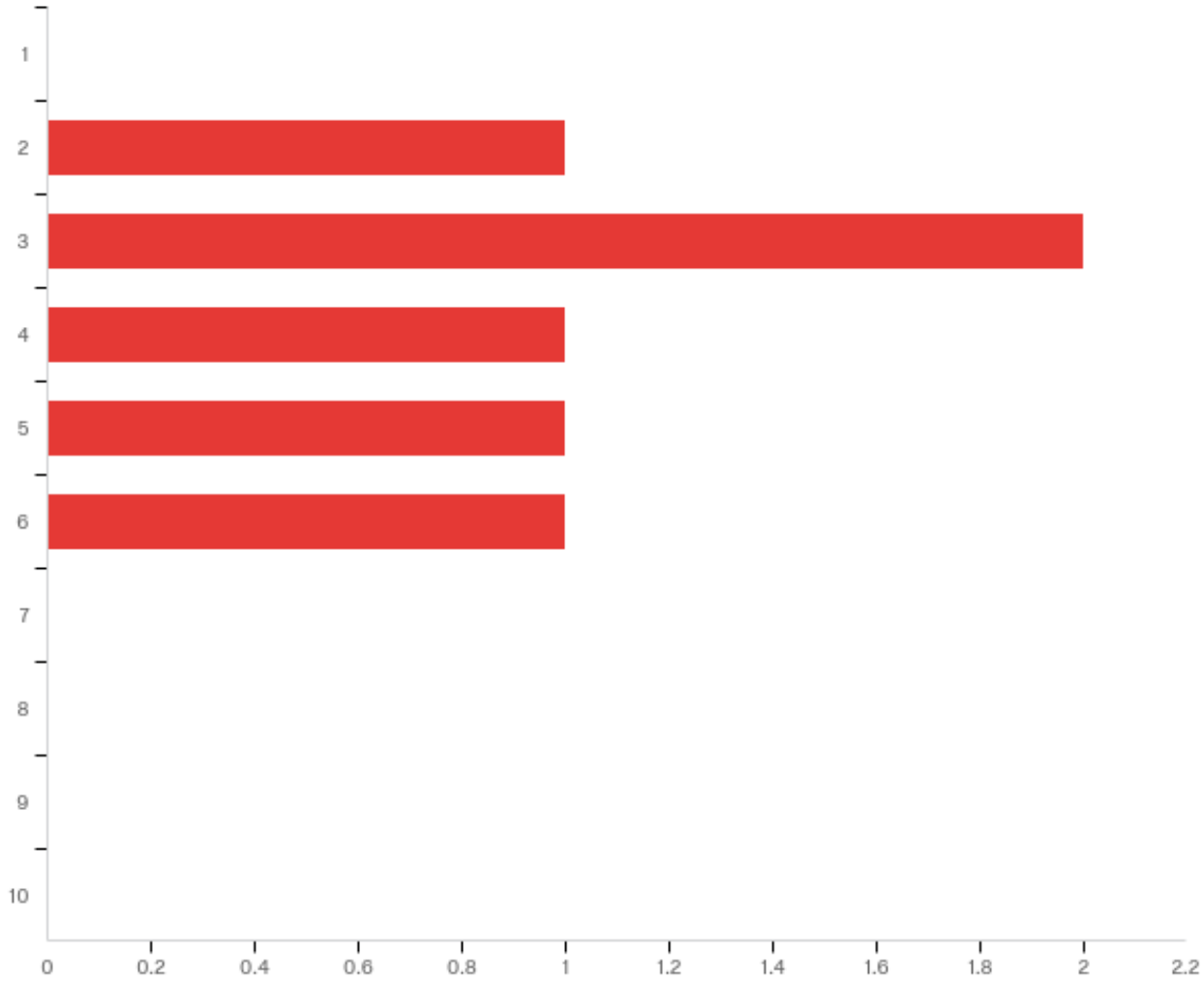
The only established means of addressing domestic labor shortages in agriculture is the H-2A visa program, but it is an excessively bureaucratic program with statutory and regulatory restrictions that render it unavailable to family farms in its current form.

Congress must take action to both stabilize the current agricultural workforce and ensure a future flow of agricultural workers through a flexible, efficient, and compassionate agricultural worker visa program that is easily accessible to family farms. Additionally, Congress should take action to attract U.S. citizens to jobs as agricultural workers and acknowledge the importance of educating interns and apprentices on farms as a pathway to increased availability of skilled agricultural labor.

NFU urges Congress to enact comprehensive and long-term solutions to ensure a legal and stable workforce for family farmers and ranchers.

Agricultural labor survey

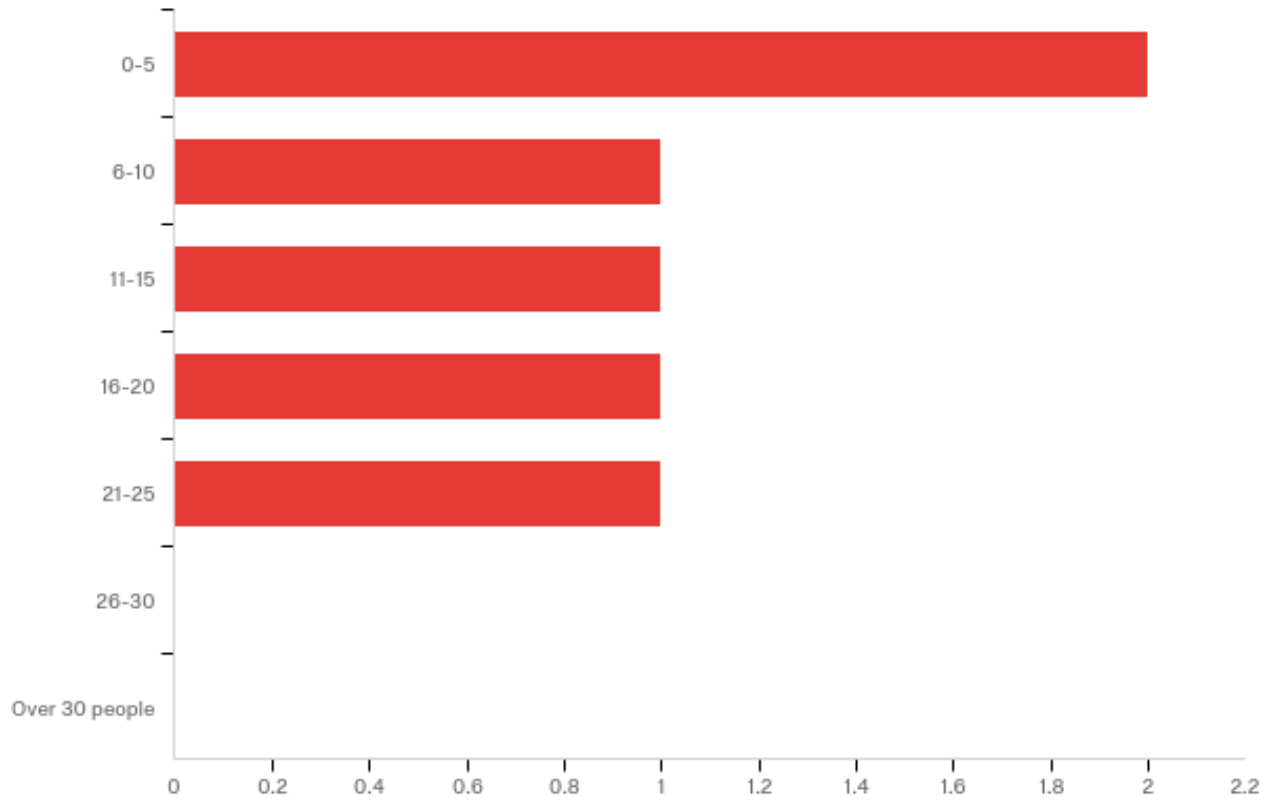
Q1 - How many people will you need to hire in the next year?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How many people will you need to hire in the next year?	2.00	6.00	3.83	1.34	1.81	6

#	Answer	%	Count
1	1	0.00%	0
2	2	16.67%	1
3	3	33.33%	2
4	4	16.67%	1
5	5	16.67%	1
6	6	16.67%	1
7	7	0.00%	0
8	8	0.00%	0
9	9	0.00%	0
10	10	0.00%	0
	Total	100%	6

Q2 - How many people will you need to hire in the next 5 years?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How many people will you need to hire in the next 5 years?	1.00	5.00	2.67	1.49	2.22	6

#	Answer	%	Count
1	0-5	33.33%	2
2	6-10	16.67%	1
3	11-15	16.67%	1
4	16-20	16.67%	1
5	21-25	16.67%	1
6	26-30	0.00%	0
7	Over 30 people	0.00%	0
	Total	100%	6

Q3 - How many people are you currently employing?

How many people are you currently employing?
14
3
4
6
10
4

Q4 - In what areas will you need new employees? Please specify (e.g. field production, processing, farmers markets, CSA, sales, delivery, value-added, planning, book keeping, education, other?)

In what areas will you need new employees? Please specify (e.g. field production, processing, farmers markets, CSA, sales, delivery, value-added, planning, book keeping, education, other?)
2018 1-Managing Director 1-Farm Manager 4- Co-Managers/Apprentices Note: 52- Interns in 2018 5 years 10- Co-Managers/Apprentices (2/year) 1- Workforce Development/Trainer 1- Administrative Assistant 2- Drivers Note: 69 -Interns in 2019 and every year thereafter Currently employing Note: 40 - interns
Value added Bookkeeping Labor
Field production and value-added
Farmers markets, food hub, value added, planning, education, marketing
Will need labor in all areas of the farm: All of the above
1. Farm labor 2. Hydroponics technical staff 3. Management trainees

Q5 - How would it affect your operation if people are not available for hire? (please describe the loss of opportunity and/or loss of service with both words and numbers if possible)

- We would not be able to increase our earned revenues. With new employees, we can increase our income by $400k. We would not be able to grow 1,000 pounds/acre of fruits and vegetables.
- All the labor plus sales and marketing would fall on me and one other family member. We are currently doing most of the labor and sales. Being spread so thin, causes lack of sales and difficulty finishing task, and keeping up with orders.
- We will be able to maintain our operation at a skeleton level but we won't be able to grow.
- Less opportunities to provide access to food.
- The business would fail. If there is no labor available for hire, operation would not be able to scale and the opportunity cost/loss would be huge.

- If the pool of available laborers is reduced, I would be forced to reduce production levels. My customers will be forced to purchase their inputs from the mainland. Should this happen, I would lose hard earned markets that I have spent years developing.

Q6 - How can we attract more people to work in agriculture in Hawaii?

How can we attract more people to work in agriculture in Hawaii?
1. Tying education to food production and entrepreneurship. 2. Creating a culture of work that is grounded in cultural/communal values. 3. Working with youth to empower leadership- succession planning worked/baked. 4. Increased human, social capital- education and economic outcomes follow youth inter-generationally.
Early education, school tours. Or visits to schools to show high school and college the diverse opportunities in agriculture.
Offer more training in cash crops and in a way that attracts the younger generation- making it feel more “hip” and attached to the larger enviro/social/health impact and less as a field that can still feel “good ‘ole boy”.
Provide livable wages/ housing allowances.
If there were jobs available that were high paying to cover the high cost of living in Hawaii. Another option would be to have on farm housing to make it more attractive for workers to come to Hawaii.
Provide long term employment opportunities Provide management training Provide technical training on hydroponics production techniques

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